

**Revision of the genera and species of ANTHONOMINI  
inhabiting North America.**

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Since the publication of "The Rhynchophora," (Proc. Amer. Philos. Soc. 1876) but few new species belonging to the tribe under consideration have been described, while the amount of material accumulated in our collections has been considerable. It was my intention, originally, to confine the following essay to *Anthonomus* proper; the discovery, however, of new and important characters, as well as a greater appreciation of others heretofore deemed of but secondary importance in the classification of genera of this tribe, has led me, step by step, to include all the genera and species occurring within our faunal limits. The Anthonomini of Europe have been made the subject of a monograph by Desbrochers des Loges (*Monographie des Balaninidæ et Anthonomidæ d'Europe et de confins Méditerranées*, 1867), which has, however, scarcely offered a suggestion that might have aided me in the study of our North American species. The genus *Orchestes* was similarly treated by Brisout (*Monogr. Ann. Fr.* 1865). Very recently a paper has been published on the species of *Anthonomus* inhabiting Great Britain; the latter publication I have not seen.

In taking a general comparative survey of the present tribe of Curculionidæ, as presented by our own with that of the European fauna, one is struck with the few points of close similarity encountered. Referring to *Anthonomus* proper, the European species, as far as I am able to judge by the not inconsiderable number represented in my collection, present far greater uniformity, structurally as well as in general habitus, than our own. In all of them the funicle of the antennæ consists of seven joints, and species entirely clothed with scales do not occur. The European genus *Bradybatus Germ.*, in which the claws are connate at base, is not represented in our fauna.

In defining the limits of the tribe, a modification of LeConte's arrangement becomes necessary. Several new genera have been included, whose position is somewhat doubtful, and which, with equal propriety, might have been placed in some other tribes of the Me-

corrhyinchid series. One of these, *Alycodes*, whose affinity to the *Erirrhini* is well shown by the formation of the ventral segments, the covered pygidium and the simple claws, and by its toothed femora, would have to be placed after *Dorytomus*, but the obliquely truncated anterior thoracic opening, the prosternum short in front of the coxæ, the antennal formation, etc., have induced me to place it in the present tribe. Another aberrant genus, *Enclyptus*, resembles *Notolomus basalis* Lec. in its general appearance, and also in the ventral formation; the prosternum, however, is short in front of the coxæ, the pygidium freely exposed, and the appendiculate claws warrant its position here. *Elleschus*, placed by Lacordaire among the *Tychiides*, I have retained in the present tribe; the second, third and fourth ventral sutures are slightly bent backward at the sides; this character is also noticed in a few *Anthonomi* (*A. elegans*, *juniperinus*). Simple claws occur in a small number of species, distributed among several genera. This abnormality in the present tribe is the final result of a gradual reduction in development, passing from the bifid claws of some *Anthonomi* (*Anthonomorphus*) to the very small, though distinct tooth of *Chelonychus* and a few others, to disappears altogether in *Epimechus*, *Ephelops*, etc. A remarkable character exists in the subcontiguous middle coxæ of *Magdalinops*. As will be seen further on, considerable importance has been attached to the relative length of the ventral segments.

The sexes can generally be separated without much difficulty by keeping in view the following points:

*Male*.—Beak stouter, more coarsely sculptured and generally more opaque; antennæ inserted nearer the apex, or more correctly speaking, the beak as already pointed out by Jekel (*Annales de la Soc. Entom. de France*, 1864) is less prolonged beyond the insertion of the antennæ, the distance of the latter from the base is about equal in both sexes.

*Female*.—Beak more slender, less coarsely punctured and more shining; antennæ more remotely inserted from the apex.

The third and fourth ventral segments appear to be a trifle shorter in the males; the fifth is generally longer and rounded in the female; shorter, subtruncate, or emarginate in the male, permitting the pygidium to become more or less visible from below. The latter is more freely exposed in the male, rarely entirely covered by the apex of the elytra, while frequently only partially exposed or entirely concealed in the female.

The tibial armature, and especially the mucro of the posterior tibiae, is more slender and longer in the male than in the female.

As is well known, all the members of the present tribe are phytophagous, and the greater number, no doubt, spermophagous. A few, like *A. sycophanta*, *P. crategi*, *Coccotorus*, etc., are said to breed in galls. I regret that I have nothing new to offer in the life-history of these insects.

## Family CURCULIONIDÆ.

### Tribe ANTHONOMINI.

Mandibles bi-emarginate and three-toothed at tip; gular peduncle long; oral organs small.

Beak cylindrical, long and slender; more rarely moderately stout and shorter (*Macrorhoptus*, some *Anthonomi*). More or less curved in all, but nearly straight in *Macrorhoptus* and *Cionistes*. Scrobes commencing at a distance from the buccal opening (less remote in the subgenus *Paranthonomus*); straight or somewhat curved; directed against the middle or lower segment of the eyes; more rarely (*Macrorhoptus*, *Cionistes*, *Pseudanthonomus* and *Ephelops*) oblique and directed beneath the eyes.

Antennæ variable, long and slender in the great majority; inserted at a distance from the apex (less remote in *Paranthonomus*); subbasal in certain *Orchestes* (*Alyctus* *Thoms.*). Scape long and slender, rarely (*Macrorhoptus*, certain *Orchestes*) short and stout; incrassate at its distal extremity and generally impinging against the eye, except in *Tachypterus* and those genera having the scrobes oblique and directed beneath the eyes. Funicle five to seven jointed, glabrous; first joint stout, generally elongate; following joints variable, each with a verticel of six to ten stiff or flexible hairs; rarely (*Acalyptus* and *Euclyptus*) entirely pubescent. Clava elongate oval or elliptic, acuminate, pubescent; closely or more loosely articulate (first joint strongly glabrous in *Magdalinops*, some *Anthonomi* and *Neomastix*), rarely very elongate and very loosely articulate (*Tachypterus* and in the subgenus *Leptarthrus*), or broadly oval and closely articulate (*Neomastix*).

Eyes at least moderately large, rounded and remote from the prothorax; rarely (subgenus *Anthonomorphus*) small and subrostral in their position; widely separated above, and nearly flat or moderately convex in most; rarely (*A. elegans*, *leucostictus*; *Leptarthrus*, *Or-*

*chestes*) very prominent, and approximate upon the front; large, transversely oval and approximate beneath in *Macrorhoptus*. In a number of species the posterior margin of the eyes is more or less free and elevated, in consequence of which its surface is directed more anteriorly.

Head more or less rounded or conical, not deeply immersed into the prothorax (except *Cionistes*).

Prothorax wider than long (except *A. brunnipennis*); narrowed in front; anterior opening obliquely truncate (except *Acalyptus*). Very rarely (*Macrorhoptus*, subgenus *Anthonomorphus* and *Trichobaropsis*) emarginate antero-inferiorly and giving a feeble appearance of postocular lobes; base bi-emarginate, produced in front of the scutellum; latter small, oval or rounded, densely pubescent or scaly.

Elytra variable, generally wider at the base than the prothorax; striato-punctate (striae confluent at base in most *Pseudanthonomi*). The outer margin shows the following variation: in those species having the elytra ample, that is, completely concealing the pygidium, the outer margin of one elytron forms a continuous horizontal line in its juxtaposition with the other and the outer stria unites with the sutural stria at an almost right angle. On the other hand, in those species in which the pygidium is freely exposed, the outer margin of each elytron ascends towards the apex, forming an angle in which the pygidium becomes more or less visible, and the outer and sutural striae unite at a more or less obtuse angle. In the text, the term *dehiscent* has frequently been used to denote the latter character, which varies greatly in extent, being most strongly marked in *A. profundus*, *elegans*, etc., and scarcely noticeable in *A. nebulosus*, *peninsularis*, etc.

Prosternum short in front of coxae (long in *Acalyptus*, and moderately so in *Anth. rufipes* and *disjunctus*). Anterior coxae contiguous, rather large and prominent; middle coxae separated by the mesosternum (subcontiguous in *Magdalinops*); the latter generally narrow, very rarely (subgenus *Anthonomocyllus*) wider than long, between the coxae. Metasternum moderately long (short in *Anthonomocyllus*); side pieces narrowed posteriorly. Posterior coxae widely separated (only moderately so in *Magdalinops*).

Ventral segments variable in length; subequal in *Macrorhoptus*, *Tachypterus*, *Magdalinops*, and some *Anthonomi*. First and second segments elongate (scarcely elongate, with the first segment short behind the coxae in *Anthonomocyllus*; very strongly elongate in



Anthonomopsis). Third and fourth segments shorter than the former, rarely (*Alycodes*, *Elleschus* and *Euclyptus*) very short. The fifth segment, aside from sexual differences as noted before, attains its greatest length in *Alycodes*, *Elleschus*, *Euclyptus* and a few species of *Anthonomus*.

The sutures are straight and deep, except the first, which is less deeply impressed (almost obsolete in *Anthonomopsis*); the latter is curved in *Elleschus*, *Anthonomopsis* and *Euclyptus*.

The pygidium varies in size; it is oblique and concealed in both sexes in *Alycodes*, *Macrorhoptus*, *Magdalinops*, *Tachypterus* and *Elleschus*; more or less exposed, at least in the male in all the others. The more perpendicular its position, the more freely exposed it becomes. It is inflexed in some males, where it fits into the emargination of the last ventral segment; this is most notably the case in *Coccotorus*, to a less extent in *Anthonomocyllus* and *Neomastix*. It is narrowly excavated in a longitudinal direction in the subgenus *Paranthonomus*.

Legs never very stout (except *Nanops*); thighs more or less clavate and generally toothed. Tibiæ generally slender; posterior of male curved in *Anthonomocyllus* and *Cnemocyllus*; toothed internally in *A. elegans* and *Leptarthrus irroratus*. The apical armature requires more than a passing notice. It consists either of a hook, unguiculum, arising from the apical articulating surface, curved inward at almost a right angle with the tibial axis, or else a mucro, a prolongation of the internal apical angle into a point, in the direction of or approximating to the longitudinal axis of the tibia. Being morphologically distinct, I have found differences in the armature of sufficient importance to be made use of in the separation of genera. The anterior and middle tibiæ are unguiculate, and the posterior mucronate in the majority of genera. All are unguiculate in *Alycodes*, *Tachypterus*, *Magdalinops*, *Macrorhoptus*, *Chelonychus*, *Anthonomopsis*, *Elleschus* and *Nanops*. *Acalyptus* has the anterior and middle tibiæ unarmed, the posterior feebly mucronate, while in *Euclyptus* all the tibiæ are unarmed, and in *Xanthus* the armature becomes very feebly developed.

Tarsi variable, never very stout (except some species of *Elleschus*); frequently long and slender; third joint bilobed, spongy or pubescent beneath, fourth joint generally of moderate length (short in *Elleschus*, very long in several species of *Cnemocyllus*). Claws somewhat approximate and armed with a large tooth in the great majority;

the tooth is either curved inward at the apex and approximate to, or else straight and parallel with the tooth of the other claw. The tooth is small and inconspicuous in a few *Anthonomi* and *Nanops*, and especially so in *Chelonychus*, where the claws are also bent backward. The claws are appendiculate, that is, armed with a broad tooth beneath in *Elleschus*, *Euclyptus* and *Orchestes*, and entirely simple and more widely divergent in *Alycodes*, *Epimechus*, *Ephelops*, *Xanthus* and *Acalyptus*.

The species of the present tribe are mostly small insects, a few almost minute; none in our fauna, at least, exceeding 6 mm., or .25 inch. in measurement.\* The vestiture consists of pubescence or scales. In *Anthonomochæta* the pubescence is intermixed with erect setæ.

In conclusion of these introductory remarks, I desire to express my thanks to all who have kindly permitted the use of their material, especially Dr. G. H. Horn, Mr. E. A. Schwarz, Mr. H. Ulke, Mr. A. Balter, Mr. R. Rauterberg and Dr. John Hamilton. I am under great obligation to my friend, Dr. Horn, who kindly made comparisons for me with type specimens in the LeConte collection at Cambridge, and who again has undertaken the task to see this paper through the press.

### Synopsis of Genera.

Claws toothed.

Middle coxæ subcontiguous. Plate v, fig. 1.....(1) **Magdalinops.**

Middle coxæ separated by the mesosternum.

Posterior tibiæ unguiculate.

Pygidium covered; claws armed with a long tooth.

Beak rather short and stout; eyes placed latero-inferiorly, somewhat approximate beneath. Plate v, fig. 2.....(2) **Macrorhoptus.**

Beak long and slender; eyes placed latero-superiorly, not approximate beneath. Plate v, fig. 3. ....(3) **Tachypterus.**

Pygidium uncovered, at least in the male; claws armed with a short tooth.

Funicle of antennæ 7-jointed; claws long, flexed backward, subchelate.

Plate vii, fig. 30a. ....(9) **Chelonychus.**

Funicle of antennæ 6-jointed; claws normal.

Abdomen flattened; first and second segments elongate; pygidium scarcely exposed. Plate vii, fig. 26.....(6) **Anthonomopsis.**

Abdomen convex; segments less unequal; pygidium freely exposed.

(10) **Nanops.**

Posterior tibiæ mucronate.

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\* The measurement is taken from the anterior thoracic margin to the apex of the elytra.

Scrobes oblique, very short. Pl. v, fig. 4a.....(4) **Cionistes**.

Scrobes long.

Scrobes directed against the eye.

Funicle of antennæ 6- or 7-jointed; clava elongate, ovoidal.

(5) **Anthonomus**.

Funicle of antennæ 5-jointed; clava obovate. Plate vii, fig. 29.

(8) **Neomastix**.

Scrobes directed beneath the eye, fourth (rarely third) joint of funicle smaller. Plate vii, figs. 27 and 28...(7) **Pseudanthonomus**.

Claws appendiculate.

Hind femora saltatorial; eyes approximate above .....(15) **Orchestes**.

Hind femora normal; eyes not approximate above, third and fourth ventral segments very short, fifth long.

Tibiæ strongly armed at apex; pygidium covered. Plate vii, fig. 35e.

(14) **Elleschus**.

Tibiæ unarmed at apex; pygidium exposed. Plate vii, 39a.

(18) **Euclyptus**.

Claws simple.

Hind tibiæ unguiculate; pygidium covered. Plate vii, fig. 34.

(13) **Alycodes**.

Hind tibiæ mucronate; prosternum short in front of coxæ.

Form convex; tibial armature very evident.

Scrobes directed against the eye.....(11) **Epimechus**.

Scrobes directed beneath the eye. Plate vii, fig. 33.....(12) **Ephelops**.

Subdepressed; tibial armature almost obsolete. Plate vii, fig. 37a.

(16) **Xanthus**.

Hind tibiæ scarcely mucronate; prosternum long in front of coxæ.

(17) **Acalyptus**.

#### **MAGDALINOPS** gen. nov.

Beak moderately long and rather robust; cylindrical, curved, slightly enlarged at the apex and also at the insertion of the antennæ; coarsely punctured. Scrobes commencing about the middle; foveiform in the beginning, becoming rapidly superficial and linear, and attaining the lower segment of the eyes; antennæ long, slender and shining; scape long, slightly thickened at the apex; funicle 7-jointed, first joint but little longer than the second, and not very stout; second joint longer than the third; joints 3-7 turbinate, outer ones longer, but not wider. Club ovoidal, shining, acuminate at apex; margin of joints undulating, fringed with pubescent. Eyes small, round, feebly convex and somewhat approximate above. Head subglobose; prothorax cylindrical, narrowed in front and somewhat constricted behind the anterior margin, which is emarginate above. Base bi-emarginate. Elytra elongate oblong, scarcely wider at base than the prothorax; sides nearly straight and parallel, behind gradually narrowed to, but not conjointly rounded at the apex, which is

slightly dehiscent and completely covering the pygidium; striæ very fine, punctures small, not closely approximate; interspaces flat. Prosternum short in front of the coxæ; middle coxæ subcontiguous, that is, very narrowly separated by the mesosternum, which ends in a point, and does not articulate with the metasternum behind. Metasternum long; posterior coxæ not widely separated; ventral segments subequal, third and fourth but little shorter than the second; fifth a little shorter than the preceding segment in the ♂ and of about equal length in the ♀. Pygidium concealed by the elytra and scarcely visible from below. Legs long and slender; thighs feebly clavate, mutic. Tibiæ slender, somewhat attenuate in their distal half, all armed with a hook at the apex, which is quite large and projecting at the anterior pair. Tarsi long and slender, first and second joints elongate triangular; third joint short, bilobed, lobes small, round; fourth joint very long and slender, about as long as the three preceding joints together. Claws long and slender, slightly divergent, and armed with a long, slender tooth.

This new genus is established upon an elongate, densely squamous species, remarkable for the construction of the antennal club and the almost contiguous middle coxæ.

**M. vittipennis** sp. nov. Pl. v, fig. 1.—Elongate-oblong, nearly parallel, black, densely clothed with grayish and grayish white, imbricate scales. Beak shining, naked, except at the base, subcarinate and substrate each side in its basal half. Head densely punctured and scaly; a long, impressed frontal line. Prothorax a little wider than long, densely and coarsely punctured with a narrow, smooth dorsal line, most evident at the middle. A broad stripe of grayish brown scales each side of the middle. Scutellum round, small, white. Alternate elytral interspaces a little wider and clothed with paler scales. Scales on the darker interspaces less dense. Long. 4—5 mm; .16—.20 inch.

*Hab.*—California, exact locality not given. Two females and one male; coll. of Dr. Horn and H. Ulke.

#### **MACRORHOPTUS** Lec.

Beak stout, cylindrical, about as long as the prothorax; straight, except at base, and densely scaly. Scrobes commencing one-quarter (♂) or two-fifths (♀) from the apex; deep, oblique and directed beneath the eyes and coalescing behind. Antennæ rather short, stout; inserted about one-third (♂) or two-fifths (♀) from the apex. Scape short, gradually thickened to apex; funicle 6-jointed, first joint rather short and robust, second joint a little longer than the third, joints 2–6 gradually wider, closely articulate; sixth joint subcontinuous to the club; whirls of numerous stiff bristles. Club

ovoidal, pubescent. Eyes transversely oval, somewhat approximate beneath. Head convex, punctured and coarsely pubescent; front foveate. Prothorax wider than long, narrowed in front; sides nearly straight behind, rounded in front; antero-inferior margin emarginate, giving rise to the appearance of feeble postocular lobes. Hind angles rectangular, slightly exerted. Base scarcely emarginate each side. Elytra oblong, very little wider at the base than the prothorax; sides nearly parallel, broadly and conjointly rounded at the apex, which covers the pygidium completely. Striae almost obsolete; surface densely punctured, each puncture bearing a scale. Ventral segments subequal, third and fourth a little shorter than the others. Legs moderately long; thighs feebly clavate, anterior armed with a long triangular tooth, middle and posterior mutic. Tibiæ gradually widened toward the apex; outer angle rounded; anterior feebly curved, middle and posterior straight, all armed with a small hook at the apex. Tarsi moderately stout, posterior more slender, third joint bilobed. Claws armed with a long tooth, which approximates the other near the apex.

The whole surface is uniformly punctured and scaly. The species resembles in form certain *Magdalis*. LeConte's statement that the tibiæ are not hooked at the apex is incorrect; the hook is small, but distinct.

Two species occur in our fauna which heretofore have been united under *estriatus* Lec.

Prothorax less densely punctured; scaly vestiture not intermixed with erect, clavate bristles ..... ***estriatus*** Lec.  
 Prothorax densely punctured; scales intermixed with erect, clavate bristles.

***hispidus*** sp. nov.

1. ***M. estriatus*** Lec. Plate v, fig. 2.—Oblong, black; antennæ and legs ferruginous, not very densely clothed with elongate, ashy gray scales, not intermixed with erect bristles. Prothorax less densely punctured. Long. 2.5–3 mm.; .10–.12 inch.

*Hab.*—Texas, Kansas, Illinois, California (LeConte).

2. ***M. hispidus*** sp. nov.—This species resembles very closely the preceding, from which it differs as follows: more densely clothed with pale gray or brownish scales, which are longer and broader than in *estriatus*, and intermixed with white, erect, club-shaped bristles, which are especially conspicuous on the sides of the prothorax, where they are directed toward the median line, and are arranged in a single row on each elytral interspace. The prothorax is densely and a trifle more finely punctured, with a broad stripe of pale brown scales along the middle; sides paler. Long. 2–3.2 mm.; .08–.13 inch.

*Hab.*—Arizona. Coll. of Dr. Horn, E. A. Schwarz and my own. Some specimens are of a uniform pale gray color.

**TACHYPTERUS** gen. nov.

Head moderately convex. Eyes rather small, round and moderately convex. Beak long and slender; scrobes deep, linear, directed toward, but not quite attaining the eyes; antennæ inserted at a distance from the apex, slender; scape not attaining the eye; funicle 7-jointed, first joint long, 2-7 short. Clava elongate, acuminate at apex, rather loosely articulate. Prothorax wider than long, constricted at apex, sides rounded; base bisinuate. Elytra wider than the prothorax at base; each elytron protuberant at the base, fitting into the emargination at the base of the prothorax; strongly convex and declivous posteriorly, concealing the pygidium. Surface tuberculate or uneven, striæ punctured. Prosternum moderate in front of the coxæ. Mesosternum rather narrow between the coxæ. Metasternum short, about as long as the first ventral segment at middle. Abdomen broadly ovate, first and second segments moderately long, subequal, third and fourth shorter, fifth longer. Legs moderately stout. Thighs feebly clavate, anterior bidentate, middle and posterior unidentate. Tibiæ somewhat compressed, anterior subangulate about the middle, bisinuate; articulating surface oblique, all unguiculate at the apex. Tarsi rather stout; first joint a little longer than the second; third joint deeply bilobed, fourth moderate; spongiosopilose beneath. Claws cleft, teeth convergent.

The type of this genus is *Anth. quadrigibbus* Say, a common species found over our whole territory, and to which I have to add a new species. They are readily distinguished as follows:

Elytra strongly tuberculate, alternate interspaces more prominent, pubescence dense.....	<b>quadrigibbus</b> Say.
Elytra feebly tuberculate, interspaces equal, pubescence sparse...	<b>consors</b> n. sp.

1. **T. quadrigibbus** Say. Plate v, figs. 3-3a.

The generic description with the above synoptic reference, will readily distinguish this well-known species from any other. A large tubercle is situated on the third interspace on the summit of the declivity, another on the fourth nearer the apex. There are also some irregular elevations on the fifth and seventh interspaces. The elytra are transversely impressed behind the scutellum, and this space is densely clothed with whitish pubescence. The prothorax has three narrow lines of whitish pubescence, while a lateral stripe of bright yellow pubescence is continued upon the densely pubescent side pieces of meso- and metathorax.



The species varies considerably in the development of the tubercles, as well as in size and general coloration. Common in the Spring on *Crataegus oxyacantha* L. The sexes are readily distinguished by the usual characters. Long. 3–4.5 mm.; .12–.18 inch.

*Hab.*—Occurs probably over our whole territory. Specimens are before me from the Eastern and Western States; Texas, California.

2. **T. consors** n. sp.—Ovate, rufotestaceous, thinly pubescent. Head convex, punctured with a fine frontal carina; frontal puncture deep. Eyes moderately convex, small. Beak long and slender, feebly curved, median elevated line not pronounced, substrate each side and densely punctured. Antennæ slender, second joint scarcely longer than the third. Prothorax broadly rounded on the sides and feebly constricted at apex, base not strongly bisinuate. Surface very coarsely punctured with a dorsal line of condensed, white pubescence. Elytra subquadrate, slightly wider behind and scarcely one-half longer than wide at the base; humeri rounded, a transverse impression behind the scutellum; striae feebly impressed, punctures moderate and rather closely placed; a small tubercle on the third interspace on the summit of the declivity; interstices equal, slightly convex, roughened; underside of thorax more densely pubescent. Long. 2.75 mm.; .11 inch.

*Hab.*—Oregon. An unique ♀ in Dr. Horn's coll. represents this species.

#### **CIONISTES** gen. nov.

A short, stout, convex species from California, densely clothed with fine pubescence, forms the type of this genus.

Beak moderately stout, cylindrical, slightly widened toward the apex and almost straight; striato-punctate. Scrobes short, oblique, evanescent posteriorly. Antennæ inserted about one-half (♂) or two-fifths (♀) from the apex; scape slender, impinging against the lower segment of the eye; funicle rather stout, 7-jointed, first joint long, not very stout; joints 2–4 a trifle longer than wide, 5–7 transverse; club elongate-ovate, very closely articulate. Head deeply immersed into the prothorax; front rather flattened with a deep, round fovea. Eyes round, approximate above. Prothorax wider than long, strongly narrowed in front; surface uneven; base straight each side, produced in front of the scutellum, the latter oblong. Elytra wider at base than the prothorax; humeri prominent, rounded, a little widened to behind the middle and rapidly narrowed to and conjointly rounded at apex, which covers the pygidium completely; surface irregular, tuberculate, very convex, striate; striae obsolete on the post-scutellar space and toward the margin of the elytra: punctures obsolete, or at least concealed by the dense pubescence; inter-

spaces densely punctulate. Prosternum very short in front of coxæ. Mesosternum moderately wide, but short, between the coxæ and almost perpendicular in front. Metasternum short, as long as the first ventral segments at middle. Abdomen broadly ovate; first and second segments rather short, segments 3-5 about equal, and each but little shorter than either of the former segments; pygidium not visible, under surface sparsely pubescent. Legs rather short and stout. Femora clavate, all toothed. Tibiæ short, slightly compressed, subparallel, feebly bisinuate internally; articular surface scarcely oblique. Anterior and middle tibiæ feebly unguiculate, posterior mucronate at apex. Tarsi stout, first joint but little longer than the second, and each with several suberect, stout, clavate bristles, arising from the upper surface; third joint deeply bilobed. Claws armed with a large, obtuse tooth.

Related to the preceding genus by the form of the abdomen, the covered pygidium and the irregular, tuberculate surface, but readily distinguished from it by the mucronate posterior tibiæ and from all others by the short, oblique scrobes.

A single species.

1. **C. insolens** n. sp. Plate v. figs. 4-4a.—Rufo-piceous, densely clothed with fine yellowish pubescence. Prothorax with a prominent, semi-circular elevation, in front of which there is a broad, transverse impression; broadly impressed each side of base. The elevated points are clothed with pale, the depressions with fulvous pubescence. Elytra broadly oval, a trapezoidal space in front and extending about one-third the length of the elytra, rufous and clothed with pale ochreous pubescence. The rest of the surface is dark piceous and clothed with yellowish gray pubescence; an oblong tuberosity on the third, fifth and seventh interspaces about their middle and arranged in a somewhat oblique line. A small but acute tubercle on the third interspace posteriorly. Posterior to the basal margin is a broad, transverse elevation and between this and the oblique row of tubercles each side, a broad impression; another tubercle is situated on the fifth and seventh interspaces anteriorly. The under surface is more thinly pubescent. Long. 2.25-2.5 mm.; .09-.10 inch.

*Hab.*—California; exact locality not given. Collections of Dr. Horn and E. A. Schwarz. The tubercles vary in development.

#### ANTHONOMUS Germ.

As here restricted, the genus presents the following characters: Beak variable, generally long and slender, more rarely shorter and stouter. Scrobes long, directed against the eye. Antennæ variable; scape reaching the eye, or very nearly so; funicle 6- or 7-jointed. Club ovoidal, annulate in some, more loosely articulate in others.

Elytra distinctly striate and punctured, leaving the pygidium, at least in the male, more or less exposed. Prosternum short, very rarely (*A. rufipes*, *disjunctus*) somewhat elongate in front of the coxæ. Mesosternum at least moderately wide between the coxæ. Ventral segments variable; pygidium visible. Thighs generally toothed, more rarely mutic. Tibial armature distinct, anterior and middle tibiæ unguiculate, posterior mucronate at apex. Claws generally armed with a large, distinct, more rarely with a small, inconspicuous tooth.

This genus contains by far the largest number of species, which vary greatly, not merely in their general habitus, but also in more important characters, possessing at least a subgeneric value. I have deemed it, therefore, expedient to establish a number of subgenera, in preference to still further increasing the number of those having full generic value. As will be seen, I have included *Coccotorus* Lec. in the present genus, as the unusually deep emargination of the fifth ventral segment of the ♂, has after all but a relative value, and should therefore not remain distinct.

*Synopsis of the subgenera of Anthonomus.*

Fifth ventral segment of male deeply emarginate. Plate v, fig. 5.

(1) *Coccotorus*.

Fifth ventral segment of male not or only feebly emarginate.

Ventral segments 1-4 short, fifth longer in the male; first segment short behind the coxæ. Middle coxæ more widely separated. Plate v, figs. 6*a*, 6*b*.....(2) *Anthonomocyllus*.

First ventral segment not short behind the coxæ. Middle coxæ less widely separated.

Posterior tibiæ alike in both sexes.

Eyes small, subrustral. Plate v, figs. 8, 8*a*.....(3) *Anthonomorphus*.

Eyes at least moderately large, position normal.

Pygidium deeply excavated longitudinally.....(6) *Paranthonomus*.

Pygidium convex, not excavated.

Vestiture of derm not intermixed with erect setæ.

Prosternum deeply emarginate in front; seventh joint of funicle subcontiguous to the club. Pl. v, fig. 9... (4) *Trichobaropsis*.

Prosternum not emarginate in front, last joint of funicle distinct from the club.

Club strongly elongate, joints loosely articulate. Plate v, figs. 10*a* and 11.....(5) *Leptarthrus*.

Club elliptic or ovoidal, not very loosely articulate.

(7) *Anthonomus*.

Vestiture of derm intermixed with erect setæ..(8) *Anthonomochæta*.

Posterior tibiæ of male curved. Plate vi, figs 20*a*, etc.....(9) *Cnemocyllus*.

Subgenus *Coccotorus* Lec.

Beak about as long as head and prothorax ; cylindrical and slightly widened at apex, nearly straight, carinate from base to apex, striate each side ; coarsely punctured ( ♂ ), perfectly smooth beyond the insertion of the antennæ in the female. Antennæ long and slender, inserted one-quarter ( ♂ ) or one-third ( ♀ ) from the apex. Scape long and slender, slightly thickened at the distal end. Funicle 7-jointed, first joint elongate, second longer than the third ; joints 3-7 subtruncate. Club elongate oval, pubescent ; joints of about equal length and rather closely connected. Eyes rather small, round and very prominent. Head punctured and pubescent ; front deeply foveate. Prothorax wider than long ; sides rounded in front, constricted at apex. Surface coarsely and irregularly punctured and densely clothed with long, coarse pubescence, except a narrow, smooth dorsal line, extending from base to about the middle. Elytra oblong, wider at base than the prothorax. Striæ fine, punctures small ; the third and fifth interspaces are tufted at base. Metasternum about as long as the first ventral segment ; third and fourth segments together, scarcely longer than the second. The fifth segment is deeply emarginate in the male, subtruncate in the female. The pygidium is fully exposed, inflexed ( ♂ ) or perpendicular ( ♀ ). Legs moderately stout ; femora clavate, toothed. Tibiæ nearly straight, anterior bisinuate internally. Tarsi long, third joint deeply bilobed, fourth long and slender. Claws not approximate at base, and armed with a long tooth.

The two species are distinguished as follows :

- |  |                         |
|--|-------------------------|
| Beak not longer than head and thorax and more coarsely punctured. Outer edge of anterior femoral tooth nearly perpendicular. Pubescence of elytra fine.....          | <b>scutellaris</b> Lec. |
| Beak slender, longer than head and thorax, more finely and less densely punctured. Outer edge of anterior femoral tooth very oblique. Elytra coarsely pubescent..... | <b>hirsutus</b> Brun.   |

1. **A. scutellaris** Lec. Plate v, fig. 5.—Oblong, rufo-piceous, beak and legs ferruginous. Base of beak, head and prothorax, densely clothed with long fulvous hair. Scutel yellowish pubescent. Elytral striæ remotely punctured ; interspaces flat, with small, distant tufts of semi-erect, seal-brown hair, which, however, are more prominent on the base of the third and fifth interspace, rest of surface clothed with a fine, pale grayish pubescence, except the first interspace, which is more or less fulvous. Femoral teeth rather large ; outer edge of tooth of anterior thigh straight, or nearly perpendicular. Long, 5-6 mm. ; .20-.25 inch.

*Hab.*—Ill., Texas, Kan., Ga. Varies in size and length of rostrum.

*C. (Anth.) prunicida* Walsh. I have not seen. According to LeConte it is identical with *scutellaris*.

2. **A. hirsutus** Brun.—Differs from *scutellaris* as follows: Beak more slender and longer than head and thorax, shining and rather finely punctured; second joint of funicle much shorter than the first and but little longer than the third. The pubescence of the elytra is long and preponderately white, mottled with fulvous and spots of seal-brown; middle two-quarters of sutural interspace bright fulvous. The outer edge of the anterior femoral tooth is very oblique; under surface clothed with long, white hair. Long, 5 mm.; .20 inch.

*Hab.*—West Point, Nebraska.

The above description has been taken from a single ♂ specimen in the collection of Mr. E. A. Schwarz, who obtained it from Mr. Bruner. This appears to be a distinct species, but having only a unique specimen for comparison, larger series may prove the above characters to be inconstant, and therefore consider the matter still *sub-judice*.

Subgenus *Anthonomocyllus*.

This subgenus has for its type *A. elegans* Lec. The beak is long and slender, feebly curved, striate and carinate. Antennæ inserted two-fifths (♂) or one-half (♀) from the apex; scape slender, impinging against the eye; funicle 7-jointed. Club not closely articulate, somewhat shining and sparsely pubescent. Eyes convex, posterior margin elevated, free. Head globose, punctured and pubescent. Prothorax convex, wider than long, and about twice as long above than below; strongly narrowed in front; base bisinuate. Elytra wider at base than the prothorax, broadly oval and very convex; striato-punctate. Prosternum very short in front of the coxæ. Mesosternum rather wide between the coxæ, declivous in front. Metasternum short. Middle coxæ rather widely separated. First ventral segment short behind the coxæ. Male: segments 1-4 short, nearly equal, fifth elongate, about twice as long as the preceding and emarginate. Female: segments subequal, fifth not elongate. Pygidium exposed, convex; inflexed and more freely exposed in the male, perpendicular and less exposed in the female. Legs rather stout; femora strongly clavate, all armed with a large, acute tooth. Tibiæ stout, toothed or not internally; posterior tibiæ curved in the male, straight in the female. Tarsi rather slender, third joint broadly bilobed, last joint long. Claws armed with a long, slender tooth.

To this genus I refer also *A. pusillus* Lec. and two new species, which, while presenting the essential characters, differ by the first

two ventral segments being a little longer and the anterior tibiæ not toothed internally. In fact, they may be looked upon as forming the end of a series, of which *A. elegans* forms the type, and where intermediate forms are wanting, or at least not represented thus far within our faunal limits. All are robust, broadly oval and very convex. The vestiture consists of scales intermixed with a fine, semi-procumbent pubescence.

They are distinguished as follows:

Eyes protuberant, narrowly separated above. Plate v, fig. 7a.

Anterior and middle tibiæ toothed internally, densely clothed with variegated scales ..... **elegans.**

Tibiæ not toothed internally, upper surface predominantly pubescent, scales arranged in spots. .... **leucostictus.**

Eyes feebly convex, widely separated above, surface thinly clothed with whitish scales.

Larger, second joint of funicle longer than the third; denuded elytral fascia more or less distinct ..... **Hamiltoni.**

Smaller, second joint of funicle scarcely longer than the third; elytral fascia obsolete ..... **pusillus.**

1. **A. elegans** Lec. Plate 5, figs. 6, 6a, 6b.—Broadly oval, dark brown, densely clothed with small scales, variegated in silvery white, gray, buff and brown on the upper surface and grayish white intermixed with brown on the under surface of the body and legs. Beak ferrugineous and somewhat shining, punctured and pubescent at base; median elevated line feeble; substrate. Antennæ slender, second joint of funicle longer than the third; joints 3-7 oblong, equal. Eyes large, transversely protuberant and rather narrowly separated above. Frontal fovea deep, elongate. Head with large, shallow punctures, transversely rugulose and clothed with large, elongate scales. Prothorax strongly and rather suddenly narrowed in front and constricted at the apex; rounded on the sides. A broad transverse groove anteriorly; surface densely punctured and squamous. Scales brown, a narrow dorsal line and a transverse one joining the former about the middle, of silvery white scales. A large buff colored spot each side of the median line in front. Elytra rather suddenly wider at base than the prothorax and somewhat protuberant each side of the scutellum; sides rounded, almost imperceptibly wider behind the middle, strongly declivous behind. Striæ fine; punctures concealed by the scales. The pattern formed by the scales is complex; the ground color is a silvery gray to grayish brown. Scutellum with a spot each side of the suture behind it white; base, sides, two approximate, oblique lines before the middle enclosing a silvery white line and continued along the sutural interspace to a posterior transverse fascia, brown. The space between the latter and the anterior oblique band is yellowish brown. A humeral spot and another each side of scutellum seal-brown. Each ventral segment with a row of long, blackish hairs. Thigh armed with a large triangular tooth. Tibiæ bisinuate, armed with a triangular tooth about two-fifths from the base; posterior tibiæ of ♀ mutic. Long. 2.5 mm.; .10 inch.

*Hab.*—Florida. Coll. of Dr. Horn and Mr. E. A. Schwarz. This is the most prettily colored Anthonomid in our fauna.



2. **A. leucostictus** n. sp. Plate v, figs. 7, 7a.—Broadly oval, robust, convex, pitchy brown, thinly clothed above with suberect, whitish pubescence; underside densely clothed with cream-colored scales, concealing the surface, except on the abdomen, where the scales become more piliform. Beak slender, opaque, feebly curved towards the apex; 4-striate from the base to a little beyond the insertion of the antennæ; median elevated line entire, expanding at the apex into an elongate triangular, smooth and shining space. Antennæ slender, testaceous, inserted about two-fifths from the buccal opening; first joint of funicle long and slender, second joint longer than the third, which is a trifle longer than the fourth; following joints rounded; club elongate, dusky and rather closely articulate. Eyes very convex, semi-globose, and rather narrowly separated above. Head short, finely rugulose and remotely punctured with a few, short hairs; frontal fovea deep, elongate. Prothorax almost twice as wide as long, strongly narrowed in front; base bisinuate, sides strongly rounded in front of middle and broadly constricted at the apex; surface densely and coarsely punctured, punctures irregular in shape, each one bearing a short, yellowish brown, scale-like hair. Elytra about one-fifth wider at the base than the prothorax; broadly oval, opaque. Striae sharply impressed, rather wide, but not deep; punctures moderately large and somewhat remote; interspaces slightly convex, distinctly rugose. Scutellum, intra-humeral spot, a post-median interrupted transverse line, consisting of larger spots, another subapical, transverse line, and a few scattered spots in the periscutellar space composed of large, cream-colored scales. Legs moderately stout, sparsely pubescent; femora clavate, all armed with an acute, triangular tooth; a small patch of condensed pubescence on the anterior surface, about one-third from the apex. Tibiæ moderately stout, slightly widened toward the apex, anterior feebly bisinuate, middle and posterior straight. Long, 2.7 mm.; .11 inch.

*Hub.*—Texas.

Agrees with *A. elegans* in form, convexity, and the closely approximated eyes, but differs markedly by the upper surface being simply pubescent, with spots and lines of large, condensed scales.

A unique ♂ in my collection. The first ventral segment is a little longer behind the coxæ, and the pygidium less inflexed than in *elegans*.

3.—**A. Hamiltoni** n. sp.—Oval, ferruginous, thinly clothed with whitish or pale yellowish scales, which are larger on the prothorax and underside of body and intermixed with fine, semi-procumbent pubescence. Beak long, moderately slender, rather shining, scaly at the base; median carina distinct; substriate and finely punctured. Antennæ moderately stout; second joint of funicle slender and twice as long as the third. Club dusky, not closely articulate; first joint shining, not pubescent. Eyes moderately convex, not approximate above. Head more remotely punctured, rugulose; front squamous, puncture small, elongate. Prothorax strongly narrowed in front; apex slightly constricted; sides rounded; a transverse groove behind the anterior margin; surface rather densely punctured and rather thinly clothed with elongate scales intermixed with coarse pubescence. Elytra a trifle wider at base than the prothorax, longer than wide; humeri rounded; sides broadly rounded from base to apex. Striæ im-

pressed; punctures moderate, rather remote, and not concealed by the scales; interspaces flat, rugulose. Scales small, uniform in color. Scutellum, scutellar and intra-humeral spot more densely scaly. An oblique, angulated anterior and a transverse posterior line coalescing near the suture and enclosing a partially denuded area. Thighs robust, armed with a subspiniform tooth, smaller on the hind pair. The tibiae are bisinuate internally; posterior of ♂ curved inward near the apex. Claws blackish. Long. 2.2 mm.; .09 inch.

*Hab.*—Florida.

It gives me pleasure to dedicate this species to my friend and colleague, Dr. J. Hamilton, whose zeal in behalf of entomology is well known.

Three specimens; coll. of Dr. Hamilton. The second ventral segment is a little longer than the third or fourth, and the fifth a little shorter than the two preceding segments united. It is closely related to the following species:

4. **A. pusillus** Lec.—Not very unlike the former, from which it differs in the following characters: much smaller, more broadly oval; ferruginous to piccons. The scales are smaller, and the pubescence more conspicuous. Front less squamous; fovea obsolete. Antennæ a trifle stouter; second joint of funicle stout and but a trifle longer than the third; outer joints more distinctly wider. Elytra more distinctly wider at base than the prothorax and scarcely longer than wide. Markings obscure, almost obsolete. The tooth on the hind femur is scarcely noticeable. Tibiæ feebly bisinuate internally. The third and fourth ventral segments are very short in the male; the second longer than the first behind the coxæ, and the fifth as long as the two preceding segments together. In the female the second and fifth segments are about equal, the others shorter. Long. 1.3–2 mm.; .05–.08 inch.

*Hab.*—Massachusetts.

#### Subgenus *Anthonomorphus*.

Distinguished from the other subgenera by the eyes, which are small, rubrostral in their position and somewhat approximate upon the front. The beak, which is slender, has four grooves or deep striæ, extending from the base to about the insertion of the antennæ. Scape of antennæ slender; funicle rather stout, more so in the female; first and second joints elongate, joints 3–7 short, about as long as wide (♂), or somewhat transverse (♀). The head is conical; front foveate. Prothorax wider than long, strongly narrowed in front; base bisinuate, emarginate at its antero-inferior margin, giving the appearance of feeble postocular lobes; surface coarsely punctured. The elytra are elongate-oval, but little wider at the base than the prothorax. Mesosternum narrow between the coxæ. Ventral segments subequal, third and fourth but little shorter than the others.

Legs slender; femora clavate, at least the anterior bidentate. Tibiæ feebly bisinuate internally; apical armature strongly developed. Tarsi slender, first joint elongate, third feebly bilobed, spongio-pilose beneath, fourth joint moderately long. Claws large, broad, slightly divergent and deeply bifid, especially the anterior; teeth scarcely approximate to each other. The vestiture consists of coarse pubescence.

The type of this subgenus is *A. fulvus* Lec., to which I have to add two new species from Lower California, very recently received by Mr. H. Ulke. The species are at once recognized by the eyes being situated at the base of the rostrum; they are smaller and narrower in *A. fulvus* than in the other species. They are readily distinguished as follows:

Pubescence forming patterns on the elytra; anterior femora alone bidentate.

**fulvus.**

Uniformly pubescent; all the femora bidentate.

Black; head constricted behind the eyes, which appear more prominent.

**peninsularis.**

Ferruginous; head not constricted behind the eyes; front transversely impressed.....**pervilis.**

**A. fulvus** Lec. Plate v, figs. 8, 8a.—Elliptic, ferruginous, thinly clothed above with coarse, pale yellowish pubescence. Beak not very slender, quadrisulcate, sulci punctured. Antennæ inserted one-third (♂) or two-fifths (♀) from the apex. Eyes transversely oval, slightly convex. Head finely and remotely punctured, moderately constricted behind the eyes; frontal fovea large and deep. Prothorax about one-half wider than long; sides rounded; apex feebly constricted; surface very coarsely and subconfluently punctured, each puncture bearing a yellowish hair; pubescence condensed along the median line. Elytra a trifle wider at the base than the prothorax, sides very feebly rounded, gradually narrowed to and slightly separated at the apex; striæ fine, feebly impressed; punctures moderate, elongate, coarser and more deeply impressed at the base; interspaces flattened, remotely punctulate, pubescence condensed in lines as follows: short post-scutellar line, second and eighth interspace from near the base to the apex, apical half of tenth, an anterior oblique and posterior subtransverse line behind the middle and extending from the eighth interspace to the third, where they coalesce; between these latter lines another exists on the sixth interspace. Scutellum densely pubescent. Underside punctured, more densely pubescent, especially on the thoracic side pieces. Long. 4.5–5 mm.; .18–.20 inch.

*Hab.*—Kansas, Indian Territory, Texas.

A readily recognized species.

**A. peninsularis** n. sp.—Oblong oval, pitchy black, conspicuously clothed with long, coarse, dirty white pubescence, which is scarcely more dense beneath than above. Beak slender, curved, striæ well impressed, coarsely punctured, apical portion more remotely punctured (♂). Antennæ slender, inserted two-

fifths (♂) from the apex; second joint of funicle longer than the third. Eyes almost round, moderately convex. Head distinctly constricted behind the eyes, giving the latter the appearance of prominence; rather coarsely, but not densely punctured, sparsely pubescent; frontal fovea elongate, superficial. Prothorax less than one-half wider than long and nearly twice as wide at the base than at the apex, latter scarcely constricted; sides regularly rounded; surface coarsely and rather densely punctured, evenly pubescent. Elytra oblong oval, distinctly wider at the base than the prothorax; sides feebly, apex more strongly and conjointly rounded. Striæ wide, deeply impressed, especially nearer the base, punctures moderately large and approximate, especially nearer the base; interspaces feebly convex, punctulate and somewhat rugose; surface evenly pubescent, scutellum more densely so; underside of thorax finely and more remotely, abdomen densely and more coarsely punctured; pygidium slightly exposed (♂). Legs slender; femora feebly clavate, bidentate, outer cusp of middle and posterior feeble. Tarsi slender, claws bifid, tooth long and slender. Long. 5.5 mm.; .22 inch.

*Hab.*—Lower California; exact locality not given.

A ♂ specimen in Mr. H. Ulke's collection, very recently received. Structurally, this species agrees very closely with the foregoing, but the eyes are nearly round, the elytra almost conjointly rounded at the tip and all the femora are bidentate. In coloration and vestiture, it is totally different.

**A. pervilis** n. sp.—Agrees with the preceding in all particulars, except the following: ferruginous, underside of thorax piceous. Head not constricted behind the eyes, which are scarcely convex; a transverse, deeply indented line above the eyes. The pygidium is very little exposed. Long. 5 mm.; .20 inch.

*Hab.*—Lower California.

A ♀ specimen, received with the foregoing from Mr. H. Ulke for determination. It is with some reluctance that I record this species as distinct from *peninsularis*, but the strikingly different coloration, which is not due to immaturity, the head not constricted behind the eyes and the deep, transverse indentation above the eyes, seems to warrant its separation, until more extensive series of specimens shall establish its identity with the former.

#### Subgenus *Trichobarapsis*.

A coarsely pubescent species from Texas, having the prosternum emarginate and the seventh joint of the funicle continuous to the club, forms the type of this subgenus. The anterior and middle femora are bidentate, posterior with a single tooth. The tibiæ are bi-emarginate internally, and the armature well marked. The tarsi are slender; claws broad and widely separate, armed with a tooth nearly as long as the claw.

*A. texanus* n. sp. Plate v, fig. 9.—Elongate oval, rufo-piceous, densely clothed above and beneath with very coarse, yellowish gray pubescence. Beak moderately slender, somewhat depressed and shining; punctured and pubescent at the base; 4-sulate from the base to the insertion of the antennæ, sulci punctured; beyond, finely and remotely punctured. Antennæ not very slender; second joint of funicle much longer than the third; joints 3-7 subtrubinate, somewhat transverse and becoming gradually wider; seventh joint continuous to the club. Verticils consisting of about 8-10 stiff, long white bristles. Club elongate ovate, joints rather closely connate, pubescent. Head convex; occiput finely, front somewhat flattened and more coarsely punctured; transversely impressed behind the eyes, frontal fovea deep, elongate. Eyes moderately convex, not free behind. Prothorax conical, one-third wider than long and about twice as wide at the base than at the apex; sides feebly rounded from base to apex, latter not constricted, slightly emarginate; base feebly bisinuate. Surface feebly convex, densely and coarsely punctured and pubescent; pubescence condensed along the median line; anterior thoracic opening not oblique, rather deeply emarginate at its inferior margin, giving rise to the appearance of postocular lobes, which are ciliate with long, flying hairs. Elytra oblong, scarcely wider at the base than the prothorax; sides nearly straight, parallel for two-thirds their length, gradually rounded to and feebly separated at the tip, leaving the pygidium exposed; base straight; striae and punctures deep and rather coarse on the disc, less so toward the apex; interspaces convex, especially toward the base, finely punctured; pygidium perpendicular. Legs slender; femora feebly clavate, anterior and middle bidentate; hind thighs unidentate; all the tibiæ bisinuate internally and subangulate above the middle. Tarsi slender. Long. 3.25-3.75 mm.; .13-.15 inch.

*Hab.*—Texas.

In form this species resembles somewhat *Trichobaris*, without, however, the denuded spots; through the emarginate prosternum and the outer joints of funicle continuous to the club, the present subgenus approaches *Macrorhoptus*, and through the former also *Anthonomorphus*.

#### Subgenus *Leptarthrus*.

Under this subgeneric name I have separated from *Anthonomus* proper two new and peculiar species from Florida, in which the antennal club becomes greatly elongated and the joints very loosely articulate; the beak is slender. Antennæ very slender, funicle 7-jointed, with the first and second joint longer than the following ones. Prosternum very short in front of coxæ; mesosternum moderately wide between the coxæ. Ventral segments subequal; first and second moderately long, former longer than the latter; segments 3 and 4 short, equal, or nearly so; fifth segment a little longer than the fourth in the male, and about equal to it in the female; pygidium exposed in both sexes; anterior legs longer and

stouter than the others. Claws armed with a short submedian tooth.

The two species are easily distinguished as follows:

Larger; anterior tibiae not toothed internally; elytral punctures foveiform.

**Julichi.**

Smaller; anterior tibiae toothed internally; elytral punctures small.

**irroratus.**

1. **A. Julichi** n. sp. Plate v, figs. 10, 10*a*, 10*b*.—Robust, subovate, reddish brown and clothed with pale yellowish pubescence, which is fine and sparse above, coarser and denser on the under surface. Beak long and slender, feebly but regularly curved; finely punctured and thinly pubescent, striate from base to the insertion of the antennae; scrobes linear, attaining the lower segment of the eyes. Antennae long and slender; scape long, slightly incrassate at the apex; funicle 7-jointed, first joint long and slender, second about two-thirds the length of the former, third and fourth joints subequal, longer than the following three joints. Club long, elliptic, densely pubescent; joints very loosely articulate, and of about equal length. Eyes moderately large, round, feebly convex. Head subspherical, finely, but not densely punctured, pubescent; frontal line feebly impressed. Prothorax twice as wide as long, strongly narrowed in front; base deeply bisinuate; strongly rounded on the sides, apex scarcely constricted; surface coarsely and rather closely punctured, rather densely and somewhat coarsely pubescent, pubescence condensed along the dorsal line and forming several circinate lines on the sides behind the middle. Elytra broadly oval, very convex, a little wider at the base than the prothorax, separately protuberant at base, fitting into the emargination at the base of the prothorax; humeri rounded, a little wider behind the middle with the sides strongly rounded to the apex, which is scarcely dehiscent; striae fine, punctures very large, foveiform and remote; interspaces irregular convex, with slightly elevated, shining tubercles, which are distributed without order; scutellum somewhat hastate in form, convex and surrounded by an excavation more or less profound. Scutellum and two basal spots more densely pubescent; pubescence slightly condensed in the foveiform punctures; under surface punctured. Legs rather stout, anterior pair longer and more strongly developed than the middle and hind pair; femora strongly clavate and toothed, anterior tooth very large, broadly triangular. Tibiae robust, strongly armed at the apex, anterior curved, dilated beyond the middle; middle and hind tibiae shorter, straight, widened toward the apex. Tarsi stout, third joint broadly bilobed, ultimate joint moderately long and slender. Claws robust, divergent and armed with a rather short, submedian tooth. Long. 4.3—5 mm.; .17 - .20 inch.

*Hab.*—Matacumbe Key, Fla.

A ♂ and ♀ specimen in Dr. Horn's collection, who received it from Mr. Wm. Jülich, to whom it gives me pleasure to dedicate this highly interesting addition to our insect fauna.

**A. irroratus** n. sp. Plate vi, figs. 11, 11*a*.—Stout oval; rufous, or rufopiceous; rather densely clothed above with very minute yellowish or fulvous scales, irrorate with patches or lines of paler and darker scales; under surface rather densely clothed with coarse, white pubescence. Beak long and slender,



slightly widened at the apex, opaque, striate from the base, punctured and thinly pubescent. Antennæ long and slender; first joint of funicle long, clavate, second joint slender and longer than the third, outer joints scarcely wider; club very elongate, loosely articulate; joints, except the last, of about equal length; the verticillate hairs are less marked than in any other species. Eyes large, round and convex. Head wide, densely scaly with a Y-shaped line of pale scales; frontal fovea linear, superficial. Prothorax almost twice as wide at the middle as long; strongly narrowed in front and constricted at the apex; base emarginate each side, regularly and strongly rounded on the sides; surface densely and coarsely punctured, each puncture bearing a squamiform hair, a narrow median line of whitish scales. Elytra suddenly and one-third wider at the base than the prothorax, and about one-half longer than wide, feebly narrowed from the base for two-thirds their length, thence rapidly rounded to the apex; strongly convex; striae wide, impressed, punctures moderately large, transverse and closely placed, more or less concealed by the scales; interspaces strongly convex, an acute tubercle near the base of the third interspace, a feeble tuberosity on the same and another more strongly developed one on the fifth interspace and situated on the summit of the declivity; the predominant color of the scales is fulvous, variegated with spots of darker and paler scales, an anterior oblique and posterior subtransverse line of white scales; scutel and intra-humeral spot white; the first and second ventral segments are only moderately long, segments 3-5 subequal. Legs stout, thinly clothed with sparse pubescence; femora strongly clavate, infuscate about the middle, all armed with a strong, broadly triangular tooth and emarginate near the extremity; tibiæ rather slender, anterior and middle strongly bisinuate along the inner margin with a large triangular tooth about two-fifths their length from the base; posterior tibiæ feebly bi-emarginate, not toothed; tarsi slender, claws with a rather short, but robust tooth. Long. 2.5-3.2 mm.; .10-.13 inch.

*Hub.*—Florida (Key West; Biscayne); coll. of Dr. Horn and E. A. Schwarz.

The toothed tibiæ distinguish this species from the preceding, and in this respect agrees only with *A. elegans*, from which it is sufficiently distinguished otherwise.

A specimen in Mr. Schwarz's collection has the elytra more uniformly whitish, with a few darker spots; the alternate interspaces are a trifle more convex, and the tuberosities on the summit of the elytral declivity are obsolete. I do not consider it specifically distinct.

#### Subgenus *Paranthonomus*.

This subgenus, which has for its type *A. profundus* Lec., is readily recognized by the deep, longitudinal excavation of the pygidium.

Beak cylindrical, rather slender and punctured; scrobes commencing one-fifth (♂) or one-third (♀) from the buccal opening, straight, deep and attaining the middle of the eyes; the latter are round, convex. Head conical, punctured; front foveate; antennæ slender, inserted less than one-quarter (♂) or one-third (♀) from the apex;

scape very slender, impinging against the eye; funicle 7-jointed, first joint long, second much shorter and about twice as long as the third joint; joints 2-7 a little longer in the male than in the female; club long, elliptical, acuminate at apex, and rather loosely articulate; shining and thinly pubescent. Prothorax wider than long, narrowed anteriorly and somewhat constricted at the apex, convex; base feebly bisinuate. Elytra oblong, wider at the base than the prothorax; humeri prominent, rounded; a little wider and more strongly convex posteriorly; external margin ascending to apex, leaving the pygidium freely exposed; scutel oblong, densely pubescent. Prosternum short in front of the coxæ; mesosternum rather narrow between the coxæ. Ventral segments more unequal in the male; third and fourth shorter, fifth nearly twice as long as either the third or fourth segment, with a smooth semi-circular space at the apex. Female: segments nearly equal, third and fourth scarcely shorter than either of the preceding ones; pygidium exposed, perpendicular, with a deep, sharply defined, longitudinal excavation. Legs long and slender; femora clavate, toothed; tibiæ slender, armature strong; tarsi slender, first joint elongate, longer than the second; third deeply bilobed, spongiosipilose beneath; fourth joint long and slender; claws large, separate at the base with a long, slender tooth.

The vestiture consists of rather coarse, whitish pubescence, which, on the elytra, is intermixed with fine, blackish hairs.

The genus is represented by three species in our fauna, while in Europe it is represented by *A. pubescens*, and probably *A. pyrenæus*.

Our species may be tabulated as follows:

Thorax coarsely and less densely punctured; pubescence sparse, black hairs very scant; tooth of anterior femur without accessory cusp.

Larger, pieco-ferruginous; prothorax nearly parallel at the sides behind, and less transverse; first two joints of funicle relatively longer.

#### **profundus.**

Smaller, rufo-ferruginous; prothorax rounded at the sides and more transverse; the first two joints of funicle relatively shorter.....**vulpinus.**

Thorax more finely and densely punctured; pubescence more conspicuous, black hairs more evident; anterior femoral tooth with an accessory cusp.

#### **rubidus.**

**A. profundus** Lec.—I have but little to add to what has been stated in the generic description and synopsis of species; the first and second joints of the funicle are longer and more slender in the ♂, the second joint being more than one-half the length of the first, while it is scarcely one-half the length in the ♀; joints 3-7 are rather longer than wide in the ♂, and transverse in the ♀; outer joints of funicle and clava darker or even piceous. Head blackish; sides of prothorax almost straight for two-thirds their length from the base, then

narrowed to and feebly constricted at the tip; surface coarsely but not densely punctured with a median line of condensed pubescence; scutellum densely clothed with pale yellowish pubescence. Elytral striae deep with elongate and rather closely placed punctures; interspaces convex, moderately wide, transversely rugulose and punctulate; pubescence fine and sparse, with very few, fine, blackish hairs intermixed; underside darker, piceous, with the pubescence more evident. Legs ferruginous; thighs armed with a strong, single tooth. Long. 3.25–3.75 mm.; .13–.15 inch.

*Hab.*—Illinois, Pennsylvania, Maryland, Michigan.

The apex of the fifth ventral segment in the male projects in the form of a small lobe, which fits into an emargination of the pygidium.

**A. vulpinus** n. sp.—Agrees with the preceding species, but is smaller, and of a reddish color; the first and second joint of the funicle are relatively shorter, the latter scarcely one-half as long as the former in the ♂ and still shorter in the ♀; the following joints are about equal in both sexes. Prothorax less than one-half wider than long and more rounded at the sides; the elytral interspaces less convex and more finely rugulose; the underside is scarcely darker than the rest. Long. 2.75 mm.; .11 inch.

*Hab.*—Pennsylvania (Hazleton).

Two males and three females were taken by myself some years ago by bush beating and considered as *S. rubidus* Lec., from which it differs by its larger size, more reddish color, coarsely punctured and finer pubescence.

**A. rubidus** Lec.—Oblong oval, scarcely wider behind, testaceous, rather densely clothed with yellowish pubescence. Beak punctured, with a smooth elevated line; scrobes less deep; first two joints of funicle less elongate than in the preceding species; second joint of funicle scarcely one-half as long as the first in the female; outer joints and club piceous. Eyes very convex. Prothorax scarcely one-half wider than long; sides rounded from the base and feebly constricted at the apex; surface densely and finely punctured, pubescence condensed in the median line. Elytra less than one-third wider than the prothorax, not widened behind the middle; striae deep, punctured; black hairs more abundant than in the two preceding species. Scutellum densely clothed with pale yellowish pubescence; scutellar region dusky, suture dark, underside darker and rather densely clothed with long pubescence. Legs testaceous, thighs strongly toothed, the anterior pair with a well marked additional tooth; anterior tibiae curved near the base and bisinuate internally. Long. 2.2–2.5 mm.; .09–.10 inch.

*Hab.*—District of Columbia, Maryland (Deer Park).

Readily recognized by its pale color, small size, very convex eyes, and the additional cusp of the anterior thighs. The black hairs on the elytra, although more abundant than in the two preceding species, are scarcely visible, except under a lens of considerable power.

As already pointed out by LeConte (op. cit. p. 199), this cannot be *A. helvolus* Boh. (Sch. Gen. et Sp. Curc. vol. vii, 2, p. 224), as the description "femoribus anterioribus breviter unidentatis, posticis muticis," and again, "Thorax latitudine postica nonnihil brevior," does in no wise correspond with the species under consideration.

#### Subgenus *Anthonomus*.

I have but little to add to the definition of the genus as here restricted, to what has been given in the table. The fifth ventral segment of the male is but rarely emarginate. The funicle is 6-jointed in but a small number of species.

The present subgenus contains by far the greatest number of species, which present structural differences of considerable importance, and which I have made use of in subdividing the species into the following groups:

#### *Funicle seven-jointed.*

Upper surface pubescent (scales, if any, are arranged in spots or lines, except *A. concinnus*); claws strongly toothed.

Elytra conjointly rounded at the apex; pygidium of ♂ very little exposed; pubescence dense, arranged in patterns on the elytra.

#### *nebulosus Group.*

Elytra not conjointly rounded at the apex; pygidium, at least of the male, more fully exposed; pubescence uniform, or condensed in spots or lines without distinct patterns.

Anterior femora bidentate.....*gularis Group.*

Anterior femora unidentate.

Third ventral segment longer than the fourth; fifth segment shorter, rarely as long as the fourth in the male.

Pubescence of elytra uniform, rarely condensed in spots or lines, and without denuded patch or fascia. Pl. vi, fig. 14....*suturalis Group.*

Elytra with spots or lines of condensed pubescence, enclosing a denuded patch or fascia. Pl. vi, fig. 15.....*signatus Group.*

Third and fourth ventral segments equal or nearly so; fifth segment of male longer than the fourth. Pl. vi, fig. 16....*scutellatus Group.*

Upper and lower surface pubescent; claws armed with a small, inconspicuous tooth.....*juniperinus Group.*

Upper and lower surface clothed with scales; tarsi long.....*squamosus Group.*

#### *Funicle six-jointed.*

Claws armed with a large, distinct tooth.....*subfasciatus Group.*

Claws armed with a short basal tooth.....*ungularis Group.*

#### *nebulosus Group.*

I have nothing further to add to the description of this group, as given in the synopsis, except that the tooth of the claws is rather

shorter and more obtuse than in the other species with 7-jointed funicle, in this respect resembling rather *A. pyri*, *ulmi*, *ornatus*, etc., of Europe. In fact, the two species belonging here, one of which is introduced from Europe, are more characteristic of the fauna of that continent than our own.

The two species are readily distinguished as follows :

More robust, anterior thighs bidentate, pubescence more squamiform.

**nebulosus** Lec.

More slender, anterior femur with a large triangular tooth, pubescence piliform.

**pomorum** Linn.

**A. nebulosus** Lec.—Oval, brownish piceous; pubescence dense, rather squamiform of a grayish, brown or fawn color and intermixed with very fine, short hairs, forming distinct patterns on the elytra. Beak long, slender, moderately curved, quadristriate, lateral striæ deeper and longer, punctured and scarcely pubescent. Antennæ inserted remotely from the apex, rather long and slender; scape slender, paler than the rest; second joint of funicle slender and longer than the third; joints 3-4 slightly elongate, longer than the following joints. Eyes convex, posterior margin free. Head convex, pubescent; occiput more finely, front more coarsely and densely punctured. Prothorax more than one-half wider than long; sides more strongly rounded in front, strongly narrowed anteriorly; apex feebly constricted and impressed at the sides behind the anterior margin; surface evenly, densely and rather coarsely punctured, rather sparsely pubescent with three narrow, paler lines. Elytra one-fourth wider at the base than the prothorax, oblong, sides feebly rounded and gradually narrowed to the tip, which is conjointly rounded; striæ impressed, punctures coarse and rather closely placed; interspaces convex, punctulate; scutellum white; the pubescence is arranged as follows: a trapezoidal basal space, a double curved band commencing below the humerus and extending obliquely to the middle of the suture, thence curving outward in a transverse direction to the outer margin; within the space included is another triangular area of pubescence; underside of body and head clothed with squamiform pubescence. Abdomen less densely and more coarsely pubescent, pygidium very little (♂) or not exposed (♀). Legs moderately stout, thighs clavate, anterior bidentate, internal tooth long, outer tooth small, triangular and connected with the former at the base. Tibiæ rather shorter and stouter than usual; anterior pair curved near the base, posterior near the apex; armature strong. Tarsi slender, pubescent beneath; claws armed with a rather short tooth, which is submedian on the anterior tarsi and becomes almost basal on the posterior. Long. 3.75--4.25 mm.; .15--.17 inch.

*Male*.—Pygidium carinate, depressed at the sides, fifth ventral segment feebly lobed at the middle.

*Female*.—Pygidium convex, fifth ventral segment bilobed at the middle.

*Hab*.—Ohio, Michigan, Illinois, Missouri.

Varies in the ground color from pale ferruginous to almost black, and also in the patterns of pubescence. The external cusp on the

anterior thigh varies in prominence, and in one specimen before me becomes almost obsolete, being replaced by several serratures on the outer margin of the internal, or large tooth. This modification, however, could not give rise to confusion with the next species in which the anterior femoral tooth is much larger, and the external margin perpendicular. In the majority of specimens examined the pygidium is entirely concealed by the elytra.

**A. pomorum** Linné. Plate vi, fig. 12.—Less robust than the preceding, dark brown or piceous, pubescence fulvous brown, intermixed with pale. Beak slender, subopaque, feebly striate, a median elevated line, pubescent at the base, funicle stouter than in *nebulosus*; second joint but little longer than the third, joints 3-7 transverse. Eyes convex, posterior margin not free. Head short, conical, rather coarsely punctured and pubescent, more coarsely so and rather concave between the eyes; frontal puncture small, but deep. Prothorax about one-half wider than long, narrowed from the base, latter scarcely emarginate each side, median lobe almost obsolete; sides feebly rounded and scarcely constricted at the apex, a curved impression behind the anterior margin; surface densely punctured, pubescence coarse, hair-like, almost concealing the sculpture, brown with a median and lateral vittæ paler. Elytra oblong, one-fourth wider at the base than the prothorax; humeri rounded, sides feebly so, conjointly rounded at the apex, declivity more oblique than in *nebulosus*, transversely impressed behind the base; striæ rather wide, but superficial; punctures large and deep, and like the striæ more or less concealed by the pubescence, latter dense and less coarse than in the preceding species; a subdenuded spot near the base of the third interspace; an oblique fascia behind the middle, extending from the seventh to the first interspace; a triangular spot on the declivity, with its base on the first interspace; scutellum, a few small spots on the disc and along the margin of the oblique fascia, white. Beneath, thorax rather coarsely, abdomen more finely punctured and thinly pubescent, except the prothorax. Legs more slender, femora feebly clavate, unidentate, anterior femoral tooth very large, acutely triangular, external margin perpendicular; tibiæ and tarsi as in *nebulosus*. Long. 4 mm.; .16 inch.

*Hab.*—Ohio.

A female specimen of this common European species was received some years ago among specimens of *nebulosus*, to which it bears a superficial resemblance. The less robust form and large, single tooth of the anterior thighs, will readily distinguish the present species. It is with some hesitancy that I introduce this species as occurring in our fauna, based, as it is, on a unique specimen.

#### gularis Group.

The species belonging to this group have the anterior thighs bidentate, the pygidium rather freely exposed, and the pubescence coarse or sparse, without any attempt at forming distinct patterns.



The second joint of funicle is longer than the third. Legs and tarsi slender (except *grandis*), claws armed with a long, slender tooth. The ventral segments not very unequal, the fifth generally longer than either the third or fourth.

They may be tabulated as follows:

Larger, pubescence coarse, antennæ inserted more remotely from the apex.

***grandis*.**

Smaller, pubescence fine and sparse above, antennæ inserted less remotely from the apex.

Beak long and slender, shining.

Pitchy black, anterior tibiæ of male not curved inward and produced at the tip..... ***gularis*.**

Elytra and legs more or less ferruginous; anterior tibiæ of male curved inward and produced at the tip..... ***virgo*.**

Beak shorter and stouter, opaque..... ***rufipennis*.**

**A. *grandis*** Boh.—Stout, subovate, rufo-piceous and clothed with coarse, pale yellowish pubescence. Beak long, slender, shining, and sparsely pubescent at the base; striate from base to the middle, striæ rather coarsely punctured; apical half finely and remotely punctured. Antennæ slender, second joint of funicle longer than the third; joints 3-7 equal in length, but becoming gradually wider. Head conical, pubescent, coarsely but remotely punctured, front foveate. Eyes moderately convex, posterior margin not free. Prothorax one-half wider than long; base feebly bisinuate, posterior angles rectangular; sides almost straight from base to middle, strongly rounded in front; apex constricted and transversely impressed behind the anterior margin; surface moderately convex, densely and subconfluently punctured; punctures irregular in size, coarser about the sides; pubescence more dense along the median line and on the sides. Elytra oblong, scarcely wider at the base than the prothorax; sides subparallel for two-thirds their length, thence gradually narrowed to and separately rounded at the apex, leaving the pygidium moderately exposed; striæ deep, punctures large and approximate; interstices convex, rugulose, pubescence somewhat condensed in spots. Legs rather stout, femora clavate, anterior strongly bidentate, inner tooth long and strong, outer one acutely triangular and connected with the former at the base; middle and posterior thighs unidentate. Tibiæ moderately stout, anterior bisinuate internally, posterior straight; tarsi moderate; claws broad, blackish, and rather widely separate; tooth almost as long as the claw. Long. 5-5.5 mm.; .20-.22 inch.

*Hab.*—Mexico, Texas.

Whether the introduction of this species into our faunal limits is permanent or not, future observations must decide. Three specimens are before me, two in the collection of Dr. Horn,\* labeled Mexico, and a specimen in Mr. Schwarz's collection from Texas. They tally well with the description given by Bohemann, though the descriptive expression in reference to the elytra—"thorace plus triplo longiore"

\* Sent me with the information that they injured the cotton plant (G. H. H.).

—is not correct. It is easily recognized by its size and the characters as given in the table. The third and fourth ventral segments are shorter than in the other members of this group.

**A. gularis** Lec.—Oblong-elliptic, pitchy black, shining, finely and sparsely clothed above with whitish pubescence. Beak shining, finely punctured; three feebly elevated lines extending from the base to about the insertion of the antennæ, the median line extending upon the front; scrobes deep, straight. Antennæ slender, second joint of funicle longer than the third; scape and first joint of funicle bright rufous, succeeding joints fuscous, verticels consisting of about 7-8 long, flexible hairs. Head short, conical; frontal puncture very small or obsolete; occiput very finely and remotely punctured, front finely rugose. Eyes moderately convex, posterior margin free. Prothorax scarcely wider than long; sides nearly straight behind, strongly rounded and narrowed anteriorly, not constricted at apex; posterior angles not rounded and base not bisinuate; surface densely and rather coarsely punctured on the sides, less so on the disc; pubescence somewhat condensed near the posterior angles and along the median line. Elytra oblong, a little wider at the base than the prothorax, feebly rounded on the sides and separately rounded at tip, almost twice as long as wide; striæ finely impressed, punctures small, elongate, and not closely approximate on the disc, a little coarser and more closely placed on the sides; interspaces wide, flat finely punctulate; scutellum densely clothed with yellowish pubescence; under-side of head, thorax, and sides of abdomen, densely clothed with pale, yellowish squamiform pubescence. Abdomen along the middle finely and sparsely pubescent and rather closely punctured; pygidium exposed, perpendicular and coarsely punctured. Legs long and slender, rufo-piceous; base of thighs, distal half of tibiæ and joints 1-3 of tarsi paler; anterior thighs with a large, elongate-triangular tooth, externally to which there is a small triangular cusp; median and posterior femora armed with a strong single tooth. Long. 3-3.5 mm.; .12-.14 inch.

*Hab.*—Virginia, West Virginia, Maryland, Michigan.

Each elytron has a fuscous reflection along its disc. This species could only be confounded with the following, from which it is distinguished by the characters given in the table.

**A. virgo** n. sp. Plate vi, fig. 13.—Resembles *gularis* in form and pubescence. It differs as follows: Beak more densely punctured, less shining; median elevated line, scarcely attaining the base. Head opaque, densely and finely punctured, front with an impressed line. Prothorax rufo-piceous. Elytra bright ferruginous, periscutellar space and along the suture dark piceous; anterior tibiæ fringed with hair along the inner margin; anterior tibiæ of male curved inward near the apex, and the internal angle produced in form of a broad hook. Legs and abdomen along the middle ferruginous. Long. 2.5-3.4 mm.; .10-.15 inch.

*Hab.*—Cobb's Island, Va. Coll. E. A. Schwarz.

Two males and one female. The female has the anterior tibiæ simple; neither curved nor produced at the apex; one male is much smaller, and has the elytra entirely piceous and the legs partly so.

**A. rufipennis** Lec.—Of the same general habitus as *gularis*, but smaller, and the pubescence a little more pronounced. It differs in the following characters: Piceous, elytra ferruginous. Beak shorter and stouter, opaque; striolate with several rows of remote punctures, lateral elevated line more prominent, median not extending upon the front. Antennæ pale rufous, club dusky, second joint of funicle elongate. Eyes convex, but not free behind. Prothorax scarcely one-half wider than long. Elytra semi-opaque, striæ and punctures more strongly impressed; interspaces slightly convex, finely rugose, each with several irregular rows of punctures; scutellar space and along the suture darker; the pubescence on the under surface is white and as dense as in *gularis*; the legs are a trifle stouter. Long. 2.2–3 mm.; .09—.12 inch.

This species varies somewhat in size and coloration, some specimens are entirely rufous; the pubescence, also, is more pronounced in some than in others.

LeConte's description: "thorax a little longer than wide," does not correspond with any specimens before me, nor does the statement in his synoptic table of species—that the anterior thighs are unidentate. The smaller, outer cusp is well marked in all but a single specimen, in which it is nearly obsolete.

*Hab.*—Pennsylvania (LeConte), Illinois, Texas, Florida.

#### suturalis Group.

The species belonging to this group have the anterior thighs unidentate. The ventral segments decreasing in length from the second, the third segment being always longer than the fourth, and this longer than the fifth, at least in the male, except *corvulus*, where the fifth is scarcely shorter than the fourth segment. In general, the species are rather sparsely pubescent, except *subguttatus*, all the femora armed with a single tooth (hind pair mutic in *melancholicus*), although the tooth of the posterior pair becomes nearly obsolete in specimens of *subguttatus* and *morulus*. The tarsi are more slender than in the next group, and the first joint longer than the second; the elytra are without a denuded fascia; lines and spots of pubescence do not occur, except in *subguttatus*, more rarely in *flavicornis*.

The species are closely related, and while it is not difficult to recognize typical specimens, aberrant forms occur whose exact position it may not be always easy to determine.

I have arranged the species as follows:

Entirely rufo-testaceous or ferruginous, underside of thorax generally darker.

Elytra finely striate, punctures small, interstices flat, wide; antennæ slender.

Elytral interspaces rugose, prothorax not constricted at apex; larger species.

**Bolteri.**

Elytral interspaces smooth, prothorax strongly constricted behind the anterior margin.....**rubellus.**

Elytra coarsely striato-punctate, punctures nearly or quite as wide as the interspaces, which are convex; antennæ stouter ..... **confusus**.  
 Dark piceous or black; elytra wholly, or in part, ferruginous; antennæ testaceous.

Elytra and abdomen ferruginous, former subopaque..... **sycophanta**.

Elytra partly black, more shining..... **suturalis**.

Black; elytra brownish, prothorax coarsely punctured..... **brunnipennis**.  
 Entirely pitchy brown or black.

Pubescence fine, inconspicuous above.

Elytra finely striato-punctate, shining; antennæ testaceous.

Prothorax conical, strongly narrowed from base to apex, sides feebly rounded; surface finely and densely punctured... **melancholicus**.

Prothorax transverse, sides strongly rounded, coarsely but not densely punctured ..... **flavicornis**.

Elytra finely striate, punctures moderate; interspaces flat, rugose and without lustre .... **morulus**.

Elytral striae deeply impressed; punctures large, distant; interspaces convex, shining..... **corvulus**.

Pubescence coarse, conspicuous, forming spots or lines on the elytra.

**subguttatus**.

**A. Bolteri** n. sp.—Oblong, ferruginous, thinly clothed with fine, whitish pubescence. Beak slender, curved, subopaque, finely pubescent and punctured, substriate at the base with a finely elevated, smooth median line. Antennæ slender, second joint of funicle elongate, longer than the third; joints 3-7 nearly equal, outer joints scarcely wider, club piceous. Head convex, punctured; punctures large, remote and superficial; frontal puncture small. Eyes convex, posterior margin somewhat free. Prothorax more than one-half wider than long; sides feebly rounded from base to apex, latter scarcely constricted and about two-thirds as wide as the base, which is only feebly bisinuate; surface densely and rather finely punctured. Elytra oblong, about one-third wider at the base than the prothorax, somewhat shining; sides parallel for two-thirds their length, rather suddenly narrowed to and separately rounded at the apex; striae finely impressed; punctures small, approximate, a trifle larger toward the base; interspaces flat finely rugulose, a small, subhumeral tubercle on the ninth interspace, visible from above; scutellum densely pubescent, under surface with a few remote punctures; meso- and metathorax darker, and especially on the sides densely clothed with squamiform pubescence. Abdomen sparsely pubescent. Legs slender, femora moderately clavate, all armed with an acute tooth. Tibiæ feebly bisinuate internally; tarsi slender. Long. 3—3.2 mm.; .12—.13 inch.

*Hub.*—New Mexico.

Three specimens in Mr. Bolter's collection, to whom it gives me pleasure to dedicate this addition to our fauna.

**A. rubellus** n. sp.—Of the same color and similar in form to the preceding species, but smaller and a trifle stouter. Beak slender, curved and finely punctured; median and a feebly elevated line each side extending from the base to about the middle of the beak. Antennæ a little more robust, second joint of funicle scarcely longer than the third; joints 3-7 not longer than wide, each with a verticil of about six rather stiff bristles. Head dusky, very convex;

glabrous with a few small, remote punctures, finely and concentrically rugulose; frontal puncture distinct. Eyes slightly convex, posterior margin moderately free. Prothorax one-third wider than long, base bisinuate; sides nearly straight and parallel from base to about the middle, rounded before the middle and strongly constricted behind the anterior margin, about three-fourths as wide at the apex as at the base; surface densely and coarsely punctured, sparsely pubescent. Elytra subovate, almost one-third wider at the base than the prothorax, slightly widened posteriorly; sides broadly rounded to the apex, which is scarcely debiscent and covers the pygidium almost completely; striae moderately fine, becoming deeper and wider toward the base and sides; punctures moderately large, round, and not closely approximate; interspaces feebly convex-smooth and scarcely pubescent; underside with a few remote punctures, otherwise as in *Bolteri*, but the pubescence is less marked, and the pygidium almost completely concealed by the elytra. Legs and tarsi as in that species. Long. 2.2 mm.; .09 inch.

*Hab.*—Lake Superior.

A unique female in my collection. It might be confounded with the preceding species, its nearest ally, but differs especially in size and form of prothorax. From *confusus* it is distinguished by the much less pronounced elytral sculpture and the interspaces being smooth.

**A. confusus** n. sp.—Similar in form to *A. Bolteri*; rufo-testaceous, pubescence coarser and more conspicuous. Beak a little stouter and less curved; median elevated line very feeble, or almost obsolete; more densely and coarsely punctured. Antennae stouter, second joint of funicle less elongate, but always longer than the third. Eyes scarcely convex, posterior margin not free. Head a trifle more coarsely punctured. Prothorax constricted at the apex, bisinuate at the base. Elytra coarsely striato-punctate, punctures large and round, almost or quite as wide as the interspaces near the base; pubescence coarser and longer; underside, legs and tarsi as in *Bolteri*. Long. 2.3—3 mm.; .09—.12 inch.

*Hab.*—California, Montana, Wyoming.

The three preceding species are very closely related, but more extensive series are necessary, to prove them as mere variations of one species. Two specimens in Dr. Horn's collection, from Montana, which I refer to the present species, show a decided similarity to *Bolteri* in the less coarsely punctured, elytral striae, more convex eyes, less conspicuous pubescence and larger size.

**A. sycophanta** Walsh.—Stouter than the preceding, dark piceous, elytra and abdomen ferruginous, thinly pubescent. Beak not very slender, curved, coarsely punctato-striolate; median elevated line well marked, a lateral one less so. Antennae stout, testaceous; second joint of funicle longer than the third. Head convex, punctured, frontal puncture deep. Eyes feebly convex, scarcely free posteriorly. Prothorax transverse, two-thirds wider than long, base scarcely bi-emarginate; sides rounded behind the middle, narrowed anteriorly and constricted at the apex; surface densely and coarsely punctured. Elytra more than

one-fourth wider at the base than the prothorax; subparallel for two-thirds their length and separately rounded at the apex, deeply and coarsely striato-punctate, especially so toward the base; interspaces somewhat convex, rugulose; under surface more coarsely pubescent, pubescence less squamiform, pygidium exposed. Legs and tarsi moderately slender, thighs feebly clavate, claws rather small. Long. 2.5—3 mm., .10—-.12 inch.

*Hab.*—Pennsylvania, Illinois, Wisconsin, Massachusetts, New Hampshire, Michigan, Oregon, Colorado, S. California, District of Columbia.

Occurs probably in all the Atlantic, Middle and Western States. Varies somewhat in coloration, but the elytra and the abdomen are always ferruginous. The anterior thoracic margin is generally reddish. The legs are either bright ferruginous, or else pitchy black, without having observed any intermediate variations. One specimen in Dr. Horn's collection from South California has the elytral striae rather superficial and the punctures smaller. I have no doubt of the identity of this species with *A. haematopus* Boh.

**A. suturalis** Lec.—Similar in size and form to *sycophanta*, but a trifle less robust, pitchy black, elytra more or less ferruginous, tibiae rufo piceous, tarsi paler, the beak is opaque, feebly striate and punctured. Antennae, head and eyes, as in that species. Prothorax transverse, more strongly rounded on the sides behind, narrowed in front, constricted and transversely impressed behind the anterior margin; surface more densely and finely punctured, base bisinuate. Elytral striae not strongly impressed; punctures small, not very close; interstices flat, more shining and very finely rugose; scutellum clothed with white pubescence; under surface as in that species, but the pubescence is a little more dense and squamiform; the tibiae are a little stouter, the tarsi longer, and the claws larger; the tooth of the latter is also a little larger. Long. 2.7—3 mm.; .11—-.12 inch.

*Hab.*—Eastern and Western States.

The red apical blotch varies greatly in extent, leaving always, however, the suture and scutellar space black. Larger sized specimens with the elytra almost entirely red, may be confounded with *A. virgo*, from which the present species differs by its unidentate anterior femora, more strongly clavate thighs and smooth rostral carina. From *sycophanta* it is to be distinguished, aside from coloration, by the sides of the prothorax being more strongly rounded and the apical constriction, the punctures also, are less coarse and less dense, and the elytra more shining.

A specimen in Dr. Horn's collection from Iowa, while evidently belonging to the present species, has the prothorax quite coarsely, though very closely, punctured. The elytra are entirely ferruginous, with a triangular basal space dusky.



**A. brunnipennis** Mann.—An oblong species, resembling the preceding in form and size, with the beak punctured and striate, the head punctured, frontal line long; the prothorax is a little longer than wide, very coarsely and densely punctured; the elytral striæ punctured, distant, not much impressed; interspaces flat, smooth: the antennæ are testaceous, with piceous club; second joint of funicle equal to third and fourth united. Legs slender, thighs very feebly clavate, armed with a very small, acute tooth, almost obsolete on the hind pair; tibiæ nearly straight. Body thinly pubescent, with some intermixed scales towards the sides and on the under surface.

*Hab.*—Geysers, Cal. Mr. Crotch.

I have not seen this species in nature, and therefore can only repeat here the description as given by LeConte.

**A. melancholicus** n. sp.—Elongate-oval, black, with scarcely any lustre, and clothed with a fine, squamiform pubescence, which is sparse above and more dense on the under surface. Beak rather stout, coarsely punctured, opaque; median carina almost reaching to the apex; serobes scarcely attaining the eye. Antennæ rufo-testaceous, not very slender; second joint of funicle longer than the third, joints 3-8 transversely rounded; clava elongate, dusky. Eyes convex, more widely separated above than usual. Head convex, rather coarsely punctured, with a well marked frontal fovea, and, like the beak, glabrous, except a few scattered scales. Prothorax conical, a little wider at the base than long, strongly narrowed anteriorly, with the sides very feebly rounded and scarcely constricted at the apex; surface convex, finely, densely and equally punctured, and sparsely covered with scale-like pubescence, each hair arising from a puncture; base feebly bisinuate. Elytra elongate, rather suddenly and about one-fourth wider than the base of the prothorax; sides almost straight, gradually narrowed to apex, which is but slightly dehiscent; striæ fine, feebly impressed; punctures small, elongate and rather remote; interspaces flat, or nearly so, and having some lustre, remotely punctulate, sparsely pubescent; underside: pectus rather densely, abdomen more sparsely punctured, rather densely clothed with pale scales. Legs slender, thighs feebly clavate, anterior and middle with a small sharp tooth, posterior mutic; tibiæ slender, rufo-piceous, anterior and middle straight, posterior feebly bisinuate and dilated internally at the tip; tarsi slender, paler than the tibiæ. Long. 3.2 mm.; .13 inch.

*Hab.*—Victoria, Vancouver.

Two males and one female, collected by my friend, F. H. Wickham, at the above locality. The female has the beak more shining and slender, the hind tibiæ less bisinuate and scarcely produced at tip. On account of the squamiform pubescence, which is readily removed, this species might be referred to the *squamosus* group, with which, however, it has not the least affinity. Abraded specimens resemble more *nigrinus*, from which it differs by the finely punctured prothorax and shorter fifth ventral segment.

**A. flavicornis** Boh.—Plate vi, fig. 14.—Oval, more robust than *suturalis*; black, pubescence sparse and moderately coarse above, more dense and squami-

form beneath. Beak not very slender, opaque, striolate, punctured. Antennæ testaceous, stout; second joint of funicle elongate, club dusky. Eyes more convex and moderately free behind. Head convex, finely and remotely punctured, concentrically rugulose, frontal puncture deep. Prothorax transverse, nearly twice as wide as long, bisinuate at the base and moderately constricted at the apex, transversely impressed in front; sides broadly rounded; surface rather coarsely, but not very densely punctured. Elytra about one-fourth wider at the base than the prothorax and about one-half longer than wide; humeri rounded, sides nearly straight, separately rounded at apex; striæ fine on the disc, becoming wider and more deeply impressed on the sides; punctures small, slightly elongate and remote, larger and more closely approximate on the sides; interspaces shining, plane on the disc, more convex towards the sides and apex, finely rugose, scutell and intra-humeral spot densely white pubescent; underside remotely punctured. Legs stouter than in *suturalis*; thighs more strongly clavate, anterior and middle tibiae bisinuate internally, posterior straight; tarsi slender, rufo-piceous. Long. 3 mm.; .12 inch.

*Hab.*—Southern States (Patin?).

A specimen in my collection, taken in this neighborhood (Hazleton, Pa.), measures scarcely 2.5 mm., but does not differ otherwise. Two specimens from Texas in Mr. Ulke's collection are a little less robust, with two interrupted lines of condensed pubescence on the elytra, thereby forming some similarity to *subguttatus*. From *nigrinus*, with which the present species might be confounded, it is to be distinguished by the less coarsely and less densely punctured prothorax, testaceous antennæ and less slender legs.

**A. morulus** Lec.—Black, or piceous, robust and convex; pubescence fine, sparse, a trifle more dense on the under surface. Beak moderately slender, punctured, shining towards the apex, median carinate line distinct, feebly striate from the base. Antennæ rather robust, rufo-piceous; scape and first joint of funicle rufous, second joint of funicle longer than the third, joints 3-7 transverse, outer joints wider. Eyes feebly convex and scarcely free behind. Head globose, occiput scarcely, front more distinctly punctured; frontal puncture rather large; a transverse, impressed line on a level with the superior margin of the eyes. Prothorax scarcely one-half wider than long, moderately narrowed anteriorly, scarcely constricted at the apex; sides almost straight behind, feebly rounded before the middle, base not bisinuate; surface coarsely and rather densely punctured. Elytra about one-third and rather suddenly wider at base than the prothorax and less than one-half longer than wide; the sides, seen from above, appear slightly emarginate behind the humerus, due to a feeble bulging outward of the ninth and tenth interspaces, rather suddenly narrowed to the apex, which is separately rounded and widely dehiscient, leaving the pygidium freely exposed; striæ fine, punctures moderately large and approximate; interspaces flat, subopaque and rather strongly rugose; under surface punctulate. Legs not very slender, thighs moderately clavate, all armed with a small, acute tooth; tibiae slightly widened toward the apex, anterior and middle scarcely biemarginate, posterior straight; tarsi moderately slender, tooth of claw long and slender. Long. 2.6-2.8 mm.; .10-.11 inch.

*Hab.*—California.

Only two female specimens in Dr. Horn's collection are before me. Bears a striking resemblance to *Epimechus mimicus*, described further on, from which, indeed, it cannot be distinguished, except by the toothed claws.

Since writing the above I have received a specimen from Dr. Horn, which has entirely the coloration of a typical *A. suturalis*, the elytra being bright rufous with the exception of a triangular basal space; it is easily recognized, however, by the form of the prothorax and the less shining elytra.

**A. corvulus** Lec.—Rather robust, oval, black shining; pubescence rather long and coarse, but sparse and easily removed. Beak moderately slender, punctured with well-marked median carina; scrobes curved, somewhat approximate beneath and directed against the lower angles of the eyes. Antennæ stout, rufopiceous; scape paler, second joint of funicle scarcely longer than the third, following joints gradually wider, verticels consisting of stiff, bristle-like hairs. Eyes feebly convex and slightly free behind. Head convex, occiput impunctured, front with a few punctures and a well-marked fovea. Prothorax transverse, more than one-half wider than long, strongly rounded on the sides and gradually narrowed to apex, which is feebly constricted; base scarcely bisinuate, surface coarsely, but not densely punctured. Elytra about one-fourth wider at the base than the prothorax; humeri rounded; sides a little widened to behind the middle, separately rounded at tip, leaving the pygidium freely exposed; striae deeply impressed, wide; punctures large, not closely approximate; interspaces convex, smooth, with small, remote punctures; scutellum white pubescent; underside remotely punctured, pubescence more dense. Legs slender, thighs feebly clavate, all armed with a small, acute tooth; tibiae almost straight, and at the apex, like the tarsi, brownish. Long. 1.5—2.2 mm.; .06—.09 inch.

*Hab.*—Pennsylvania, Massachusetts, District of Columbia, Illinois, Wisconsin, Michigan, Texas, Arizona.

Easily recognized by its small size, shining black color, coarsely punctured prothorax and sparse pubescence. The pubescence is easily rubbed off, giving the insect a still more shining appearance, and on superficial examination, might give rise to confusion. Specimens are before me of a brown color, probably due to their being immature.

**A. subguttatus** n. sp.—Elongate-oval, piceous, more slender, but otherwise closely allied to *flavicornis*, from which it differs in the following characters: Pubescence coarse, dense and white. Beak more slender and shining, finely and less closely punctured; median carina more distinct, shining, and extending to the frontal puncture. Head not concentrically rugulose, second joint of funicle scarcely longer than the third. Prothorax less rounded on the sides, which are almost straight behind with the hind angles rectangular; apex not constricted, punctures smaller and remote on the disc, crowded on the sides; a

median vitta, wider at the base of condensed pubescence. Elytral striæ generally more deeply impressed, two interrupted lines of condensed pubescence, extending from the sides to the second interspace, where they unite; the space enclosed between these lines is not denuded, densely clothed on the underside with white pubescence; pygidium freely exposed. Legs slender, rufo-piceous, thighs feebly clavate, tooth small, posterior almost obsolete; anterior and middle tibiæ scarcely bisinuate internally. Long. 2.7 mm.; .11 inch.

*Hab.*—Florida, District of Columbia.

A specimen in Mr. Ulke's collection, from District of Columbia, differs from the typical form by the pubescence being pale yellowish, sparser and less coarse.

This species might possibly be referred to the *signatus* group, with which, however, it has no close relationship; the first and second ventral segments are relatively shorter, and there is no denuded elytral fascia. Dr. LeConte indicated this species under *A. scutellatus* Gyll. (Proc. Amer. Phil. Soc. vol. xv, p. 199), but failed to describe it.

#### signatus Group.

This group contains species of rather small size, and presenting a similarity of habitus which makes them easy of recognition. They agree with those of the preceding group in the abdominal formation; the first and second ventral segments, however, are generally longer and nearly equal in length, the gradual decrease in length commencing with the third segment, instead of the second, as in that group. The elytra have a post-median denuded patch or fascia, surrounded, in the fresh state at least, by spots or lines of pubescence. They differ very little in sculpture, and are to be distinguished rather by a general assemblage of characters and habitus. The first two tarsal joints are equal, or nearly so.

The following table, supplemented by the specific description, will enable the student to identify his species:

Elytral interspaces equal, or nearly so.

Front foveate.

Larger and more robust, second joint of funicle distinctly longer than the third; prothorax strongly rounded on the sides.

Frontal fovea small, punctiform; pubescence fine, inconspicuous.

Elytra reddish, scutellar space and fascia darker, latter interrupted on the third interspace; beak less curved and more opaque.

**signatus.**

Elytra pitchy black, unicolorous; fascia not interrupted; beak curved and more shining, ..... **consimilis.**

Frontal fovea large, elongate; pubescence coarse, conspicuous.

**vespertinus.**

Smaller and less robust; second joint of funicle scarcely longer than the third; prothorax not strongly rounded on the sides.

Clothed above with pubescence only, pitchy black, elytra reddish brown, suture darker.....**musculus.**

Thinly clothed with broadly oval scales, intermixed with fine pubescence, yellowish brown, each elytron with two black spots..**concinuus.**

Front sulcate.

Pitchy-black, thighs feebly clavate, posterior toothed .. **sulcifrons.**

Reddish brown, thighs strongly clavate, posterior not toothed.

**sexguttatus.**

Elytral interspaces alternately wider .....**interstitialis.**

**A. signatus** Say. Plate vi, fig. 15. —Robust, oval, piceous; elytra red, denuded fascia and scutellar space darker, thinly clothed with whitish pubescence. Beak moderately slender, feebly curved, subopaque and rather densely striato-punctate; median carina smooth, distinct. Antennæ testaceous, club darker, funicle rather stout, outer joints distinctly wider, second joint distinctly longer than the third, but not slender; joints 3-7 transversely rounded. Eyes moderately convex, free behind. Head convex, occiput somewhat shining, front with a few remote punctures, finely and indistinctly rugulose, frontal puncture distinct. Prothorax wider than long, moderately narrowed in front; sides not strongly rounded, feebly constricted at the apex and transversely impressed behind the anterior margin; surface rather coarsely and densely punctured, pubescence condensed along the median line. Elytra less than one-fourth wider at the base than the prothorax and about one-half longer than wide, a little widened to behind the middle; sides feebly rounded; striæ impressed, punctures moderately large, close set and becoming smaller towards the lateral margin; interspaces slightly convex, shining with an irregular row of fine punctures; the denuded fascia extends from the side to the third interspace, another denuded spot on the second interspace; scutellar space and along the suture darker; scutellum and intra-humeral spot densely pubescent. Thorax underneath more densely clothed with white, squamiform pubescence. Abdomen sparsely pubescent, segments transversely strigose, first and second segments rather long. Legs slender, femora feebly clavate, piceous, all armed with a sharp, well-marked tooth; tibiae paler, anterior feebly bisinuate, middle and posterior nearly straight; tarsi pale, first joint elongate. Long. 2—2.9 mm.; .08—.12 inch.

*Hab.*—Atlantic slope.

Varies considerably in size, and still more so in coloration, from pale testaceous to almost pitchy-black; the latter variation might readily be mistaken for the next species, from which it differs by the less rounded prothorax and stouter antennal funicle; the beak also is more densely punctured and less curved. The following variety is well marked, and deserves special consideration:

Var. **pallidus**.—Testaceous; head dark piceous; rostrum and pectus infusate. Prothorax nearly twice as wide as long; the scutellar space is scarcely darker. I would consider this to be *bisignatus* Gyll., but the expression—"thorax latitudine baseos paulo

brevior," does not apply to the form under consideration, and probably refers to a pale variety having the typical form of thorax.

Occurs in Louisiana, Georgia, Florida, Maryland.

**A. consimilis** n. sp.—Agrees with *signatus* in size and general habitus, but differs in the following characters: Color uniformly pitchy-brown or black. Beak distinctly curved, less densely punctured and a little more slender; funicle of antennæ less robust, outer joints scarcely wider; second joint more elongate and slender. Head opaque, rugulose. Prothorax, with the sides, more strongly rounded, and more strongly narrowed anteriorly; denuded fascia always reaching to the first interspace; tibiæ, especially middle and posterior, more widened toward the apex. Long. 2.5–2.8 mm.; .10–.11 inch.

Might be confounded with *musculus*, but is stouter, and the second joint of funicle is elongate and slender.

*Hab.*—District of Columbia. Dr. Horn's and Mr. Ulke's coll.

**A. vespertinus** n. sp.—Subovate, brown; pubescence rather coarse, white and conspicuous. Beak feebly curved, not very slender, densely punctured and somewhat shining; median elevated line almost obsolete, feebly striate at base. Antennæ rather stout, scape and first joint of funicle paler; second joint elongate, outer joints but little wider. Eyes flattened, scarcely free behind. Head short, convex, remotely punctured, each puncture bearing a whitish hair, front sulcate. Prothorax wider than long, moderately narrowed anteriorly; sides rounded from the base, scarcely constricted at the apex; coarsely but not very closely punctured, base bisinuate. Elytra more than one-fourth wider at base than the prothorax; sides feebly rounded; striae deeply impressed, punctures coarse, closely approximate; interspaces convex, finely rugose and each with several irregular rows of piliferous punctures; surface rather dull, without lustre; the fascia extends from the side to the third or second interspace; side pieces of thorax densely clothed with white scales. Abdomen more thinly pubescent, the fifth ventral segment is not shorter than the fourth, pygidium freely exposed, densely punctured. Legs not very slender, thighs moderately clavate, armed with an acute tooth. Long. 2.3–2.5 mm.; .09–.10 inch.

*Hab.*—C. Ill. (Hamilton), Fla., Ga., Texas (Dr. Horn).

Differs from *signatus* by its coarse pubescence, larger, elongate frontal fovea and uniform brown color; the elytral fascia is wider, extending farther anteriorly, and is not interrupted.

Dr. Hamilton's specimen has the prothorax more finely and densely punctured, and the posterior thighs not toothed. It may possibly be distinct, but as it agrees otherwise, I do not feel justified in establishing a new species on a single specimen.

**A. musculus** Say.—Elongate-oval, rufo-piceous, thinly clothed with white pubescence. Beak rather slender, feebly curved, subopaque, punctured; median elevated line distinct. Antennæ stout, rufo-testaceous, club darker; second joint of funicle scarcely longer than the third, outer joints wider. Head scarcely convex, not punctured, frontal puncture small. Eyes convex, posterior margin



free. Prothorax about one-half wider than long, gradually narrowed anteriorly, base feebly bisinuate; sides broadly rounded from base to apex, latter feebly constricted, transversely impressed in front; surface densely and rather coarsely punctured. Elytra about one-third wider at base than the prothorax; sides feebly rounded, gradually narrowed to and separately rounded at the apex, leaving the pygidium freely exposed, latter punctured; rufous, sutural interspace darker; striae well impressed, punctures large and rather closely approximate; interspaces slightly convex, smooth, shining with a few small, scattered punctures; underside with a few scattered punctures, sparsely pubescent. Legs not very slender, dark ferruginous, thighs feebly clavate, armed with an acute tooth; tarsi moderately slender. Long 1.8—2 mm.; .07—-.08 inch.

*Hab.*—Southern, Middle and Western States.

Varies in coloration; fresh specimens have the elytra more bright red, which in dried specimens changes to a dark brown or even blackish color. The denuded spot can generally be recognized by its darker color, and being surrounded by a line of pubescence, which is liable, however, to abrasion. Why Prof. Riley should consider this species identical with *signatus* (Agric. Report 1885, pp. 276—282) I cannot understand, for, aside from the difference in length of the second joint of funicle which is always evident in fresh and can be demonstrated on old specimens that have been relaxed, the present species is less robust, thorax less rounded on the sides, and suture always darker. According to Dr. John Hamilton it is rarely found after the first week in June, whereas *signatus* is found always during the whole of Summer on various plants and shrubs, while the former is generally taken on Huckleberry.

**A. concinnus** n. sp.—Oval, reddish brown, thinly clothed with small, white, broadly ovate scales, intermixed with fine pubescence. Beak not very slender, slightly widened at apex, feebly curved, indistinctly striate, very finely punctured and pubescent. Antennæ slender, first joint of funicle not very stout, second and third slightly elongate, former scarcely longer than the latter, outer joints slightly wider. Eyes moderately prominent, posterior margin free. Head finely, but not closely punctured, thinly clothed with scales and pubescence, frontal fovea rounded, marked. Prothorax more than one-half wider than long, strongly narrowed in front, broadly but not strongly constricted at the apex and transversely impressed about one-third behind the apical margin; sides not strongly rounded, hind angles obscurely rounded; surface very closely and rather coarsely punctured, each puncture bearing a short scale-like hair, scales somewhat condensed on the sides and along the median line. Elytra oval, about one-fourth wider at the base than the prothorax, not wider behind the middle, sides regularly rounded, striae well impressed, punctures large, approximate; interspaces convex, slightly roughened, each with a row of fine punctures bearing a fine recurved hair, space behind the scutellum dusky, latter small, round; a large, blackish, semi-circular spot behind the middle, with the concavity outward and extending from the third interspace, deprived of scales;

another smaller spot on the confluence of the fourth, fifth and sixth interspaces; these spots are surrounded by interrupted lines of condensed scales; another spot of condensed scales at the base of the sixth interspace, rest of surface more thinly scaly; underside evidently punctured, thinly clothed with scales. Legs moderately slender, femora clavate, infuseate, all armed with a sharp and rather large tooth, more conspicuous on the anterior pair; tibiae nearly straight, slightly widened toward the apex; tarsi not very slender; claws armed with an acute tooth. Long. 1.8—2.2 mm.; .07—.09 inch.

*Hab.*—N. Smyrna, Fla.

Two specimens in Mr. Schwarz's collection. A very distinct species, readily recognized by its vestiture consisting of scales intermixed with fine pubescence and the double elytral spots, the anterior of which is semi-annular in shape; superficially, it very much resembles light colored specimens of *signatus*, but is smaller. The first ventral segment is rather shorter than usual in this group, and fifth segment of the male does not appear to be shorter than the fourth.

**A. sulcifrons** Lec.—Subovate, dark piceous, shining, thinly clothed with white pubescence. Beak not slender, shorter than head and thorax, feebly curved, subopaque, punctured, median line feeble. Antennæ rather slender, rufo-piceous, scape and first joint of funicle rufo-testaceous; second joint of funicle about twice as long as the third, outer joints scarcely wider. Head feebly convex, opaque, impunctured; front with long, feebly impressed line. Eyes convex, posterior margin free. Prothorax wider than long, moderately narrowed anteriorly and distinctly constricted at the apex, regularly rounded on the sides; surface not very closely punctured, punctures rather small, the intervening ridges and spaces rugulose; pubescence somewhat condensed along the basal half of the median line. Elytra about one-fourth wider at the base than the prothorax, a little wider behind the middle; striæ moderately impressed, punctures large, especially toward the base and sides, approximate; interspaces feebly convex, rugulose with remote, irregularly placed punctures, scutel white pubescent, denuded fascia not well defined; underside remotely punctulate, prothorax and pectus densely pubescent, abdomen sparsely so; pygidium not freely exposed, thighs feebly clavate, all armed with an acute tooth; tibiae not very slender, straight, anterior feebly bisinuate internally; tarsi less slender, first three joints broad, not longer than wide, fourth joint less slender and a little shorter than in the three preceding species. Long. 2—2.2 mm.; .08—.09 inch.

*Hab.*—Missouri, Illinois, District of Columbia, Pennsylvania.

Similar in size and habitus to *corvulus*, from which it differs by the prothorax being more strongly rounded on the sides and less coarsely punctured, the denuded elytral fascia and the tarsi shorter and more robust. From *consimilis*, of the present group, which it resembles in appearance, it differs by its smaller size, shorter and relatively stouter beak and shorter tarsi; the first two joints of the funicle are also relatively shorter than in that species. It might also

be confounded with the dark variety of *musculus*, from which it can readily be distinguished by the shorter beak and tarsi, and the second joint of funicle distinctly longer than the third.

Comparison with the type of this species, in the LeConte collection at Cambridge, was kindly made by Dr. G. H. Horn.

**A. sexguttatus** n. sp.—Oblong, rufo-testaceous, pubescence whitish, fine and sparse. Beak not slender, curved, about as long as head and thorax, finely punctured, somewhat shining, with a fine, elevated median line. Antennæ moderately slender, second joint of funicle very little longer than the third, joints 3-7 transverse, club dusky. Eyes feebly convex posterior margin free and more than usually approximate upon the front. Head convex occiput finely alutaceous, dusky; front with several rows of piliferous punctures and with a long and distinct sulcus between the eyes. Prothorax wider than long, sides rounded, broadly but not strongly constricted at the apex, transversely impressed in front, rather finely and not very densely punctured, except on the sides, where the punctures become a little more crowded and coarser. Elytra less than one-fourth wider at base than the prothorax, suboval, a trifle wider posteriorly; sides feebly rounded; striæ impressed, punctures moderately large, round and closely approximate; interspaces slightly convex, with an irregular row of small punctures and somewhat rugulose; scutellar space and along the suture dusky, denuded fascia rather broad, extending from the side to the third or second interspace, lines of pubescence not well marked; scutellum, intra-humeral spot and a spot on the anterior and posterior margin of the denuded fascia, on the fourth interspace more densely pubescent, between the latter two spots is a dark line; underside and legs thinly pubescent and remotely punctulate. Legs not very slender, thighs rather strongly clavate, anterior with a large, triangular tooth, middle with a small tooth, posterior thighs mutic; anterior tibiae feebly bisinuate internally, middle and posterior straight. Long. 2 mm.; .08 inch.

*Hab.*—Florida. Collection of Dr. Horn, Mr. E. A. Schwarz and H. Ulke.

This species greatly resembles *rufipennis* of the *gularis* group, but is smaller, and differs further by the front being sulcate, the anterior thighs with a single tooth and the posterior thighs mutic.

The first two ventral segments are relatively shorter in this than the other species of this group, and the spots of condensed pubescence on the elytra give it a peculiarly striking appearance.

**A. interstitialis** n. sp.—Elongate, subovate, black; pubescence very fine and scant above; side pieces of thorax and sides of abdomen densely clothed with pale yellowish, squamiform pubescence. Beak rather slender, punctured, with the median carina distinct. Antennæ rufo-piceous, rather robust, first and second joint of funicle rather slender, elongate; joints 3-7 rounded, outer ones but little wider. Eyes scarcely convex and but indistinctly free behind. Head subopaque, finely alutaceous, with several concentric rows of very small, piliferous punctures; front with a fine, somewhat interrupted line. Prothorax but little

wider at the base than long, sides strongly rounded and narrowed to the tip, the latter constricted: base scarcely emarginate each side, disc more remotely, sides more densely punctured, punctures variable in size from medium to coarse; pubescence condensed in front of the scutellum. Elytra one-third wider at the base than the prothorax, oblong and rather shining, a little widened posteriorly, sides nearly straight; striae feebly impressed, punctures moderate, round and not closely approximate; interspaces nearly flat, smooth, with a few small punctures; second, fourth and sixth wider than the adjacent interspaces, denuded fascia extending to the third interspace; lines of pubescence faintly marked. Legs and tarsi long and slender, thighs scarcely clavate, anterior and middle armed with a very small, acute tooth, posterior mutic; tarsi densely pubescent beneath. Long. 2—2.5 mm.; .08—.10 inch.

*Hab.*—White Fish Point, L. Sup.; District of Columbia.

Two specimens (♂ and ♀) in Mr. Schwarz's collection.

A very distinct and easily recognized species.

#### nigrinus Group.

The species of this group differ from those of the two preceding ones by the fifth ventral segment of the male being longer than the fourth, the third and fourth equal in length, or very nearly so. In some specimens the fifth ventral is not longer than the fourth; in this case, however, the third and fourth are always equal and shorter than in the two preceding groups.

The species are closely related, and are to be distinguished as follows:

All the thighs armed with a single tooth.

Black; front foveate.

Robust; anterior and middle tibiae curved inward near the apex; first joint of anterior tarsi twice as long as the second; femoral tooth spiniform.

**ebeninus.**

Less robust; tibiae straight, first tarsal joint scarcely longer than the second; femoral tooth acutely triangular.....

**nigrinus.**

More elongate; tibiae curved near the base; first tarsal joint longer than the second; femoral tooth large.....

**albopilosus.**

Piceous or blackish, with æneous lustre; front sulcate between the eyes.

Pubescence uniform; elytra without denuded fascia or lines of condensed pubescence.

Larger and more robust; base of middle and hind thighs and distal half of tibiae and tarsi, honey-yellow.....

**xanthocnemus.**

Smaller and more slender; legs piceous, tibiae and tarsi paler.....

**æneolus.**

Elytra very coarsely striato-punctate with partially denuded fascia and lines of condensed pubescence.....

**faber.**

Posterior thighs mutic, elytra with denuded fascia.

Less robust, front sulcate, upper surface rather densely clothed with squamiform pubescence, denuded fascia ill-defined.....

**effetus.**

Very stout, front foveate, upper surface less densely pubescent, denuded fascia well defined.....

**scutellatus.**

**A. ebeninus** n. sp.—Robust, ovate; black, with a faint æneous lustre and rather conspicuously clothed with white pubescence, which is more dense on the under surface. Beak long and slender, feebly curved, punctured, scarcely striate. Antennæ long and slender, scape and first joint of funicle rufo-testaceous, remainder rufo-piceous; first joint of funicle long, not very stout, second joint longer than the third, outer joints scarcely wider, club rather loosely articulate. Eyes somewhat prominent, convex, posterior margin free. Head convex, occiput impunctured, front finely punctured and pubescent, especially between the eyes, frontal fovea elongate, rather deep. Prothorax fully one-half wider than long and nearly twice as wide at the base than at the apex, latter scarcely constricted; sides regularly rounded from the base, latter biemarginate; surface densely and rather coarsely punctured, punctures subconfluent on the sides, each bearing a whitish hair; scutellum oval, densely pubescent. Elytra shining, one-fourth wider at the base than the prothorax; oval, sides feebly rounded; striæ impressed, punctures round, small and closely approximate; interspaces slightly convex, each with about three irregular rows of fine, piliferous punctures; pubescence evenly distributed, except a small intra-humeral spot, which is more densely pubescent; underside densely punctured, pubescence scarcely as long as above; pygidium fully exposed, punctured. Legs long and slender, thinly pubescent; femora slender, feebly clavate, armed with a spiniform tooth; tibiæ long and slender, sinuate internally, anterior and middle curved inward near the apex, posterior straight; tarsi slender, first joint of anterior almost twice as long as the second; claws armed with a long slender tooth. Long. 3.5 mm.: .14 inch.

*Hab.*—Lower California; exact locality not stated.

A ♂ and ♀ specimen in Mr. Ulke's collection, who received it very recently from the above locality.

The mesosternum is moderately wide between the coxæ, where it ends in an elevated, transverse ridge, and slopes very gradually in front. The third and fourth ventral segments are of equal width, and the fifth distinctly longer than either; the pygidium is freely visible from below.

This species, although very distinct, is closely allied to *flavicornis*, *nigrinus* and *albopilosus*. It resembles *flavicornis* so closely that, if viewed from above, it cannot be distinguished, except by its somewhat greater size; the abdominal formation, however, is strikingly different, the beak, legs and tarsi much more slender; the first joint of the anterior tarsi twice as long as the second, while equal in *flavicornis*. From the next species it differs by its being more robust, the beak more slender, thorax less coarsely punctured, the femoral tooth spiniform, the anterior and middle tibiæ curved near the apex, and the more slender tarsi with the first joint nearly twice the length of the second. The elytra, also, are a little more strongly striato-punctate, and the pubescence much more conspicuous than in that species.

From *albopilosus* it differs by its stout form, the elytra less coarsely striato-punctate; the femora are more slender, the tooth smaller, and the tibiae are not curved near the base.

**A. nigrinus** Say.—Subovate, robust, pitchy-black, thinly clothed with fine, whitish pubescence. Beak not very slender, opaque, coarsely punctured with the median elevated line distinct, shining, and striate each side from the base to about the middle; scrobes slightly curved inferiorly and rather superficial. Antennæ inserted about the middle, slender, piceous: first joint of funicle robust, second elongate, slender; following joints gradually wider. Eyes feebly convex and scarcely free behind. Head short, spherical, with a few, rather large, remote punctures, front deeply foveate. Prothorax wider than long, sides broadly rounded from the base, moderately narrowed anteriorly and scarcely constricted at the apex; equally, densely and coarsely punctured. Elytra oval, one-third wider at the base than the prothorax and about one-half longer than wide, finely striato-punctate, punctures not approximate; interspaces flat, remotely punctulate; scutellum densely clothed with white pubescence; under surface a little more coarsely and densely pubescent; side pieces of thorax and abdomen with a few remote punctures. Legs slender, femora feebly clavate, armed with a small, acute tooth; tibiae rather slender, nearly straight; tarsi long and moderately slender, fringed with white hair. Long. 3 mm.; .12 inch.

*Hab.*—District of Columbia, North Carolina, Louisiana, Virginia.

Not unlike *flavicornis*, from which it differs in the abdominal formation, more coarsely punctured thorax and pitchy-black antennæ. Might also be confounded with *morulus*, but is more robust and less convex, and the elytra more shining. Its resemblance to *ebeninus* has been noted under that species.

**A. albopilosus** n. sp.—Oblong-elliptic; black, somewhat shining, not densely clothed with long, white pubescence. Beak longer and more slender than in *nigrinus*; smooth, shining, sparsely and finely punctured; substrate from the base to about the middle, median elevated line well marked, shining; scrobes straight. Antennæ slender, inserted about two-fifths (♂) or one-half (♀) from the apex; rufo-testaceous, first joint of funicle long and less stout, second joint a little more slender, elongate; following joints scarcely wider than long. Eyes almost flat, not at all free behind. Head subconical, somewhat shining, and rather coarsely punctured, frontal fovea deep. Prothorax a little wider than long, rather strongly narrowed in front and feebly constricted at the apex, sides broadly rounded; surface closely, but not very coarsely punctured; base nearly straight each side. Elytra oblong, shining, but little wider at the base than the prothorax, feebly rounded on the sides and gradually narrowed to the tip, coarsely striato-punctate, punctures rounded, approximate; interspaces moderately convex, punctured; under surface rather coarsely, but not very closely punctured, more densely and coarsely pubescent. Legs long and slender, femora clavate, armed with a triangular tooth, which is larger and very prominent on the anterior pair; tibiae slender, anterior strongly curved near the base and bisinuate internally; tarsi long and slender. Long. 2.8—3.3 mm.; .11—.13 inch.

*Hab.*—California, Texas, New Mexico.



A very distinct species, differing from the preceding by its longer and denser pubescence, the anterior tibiae curved near the base, the large anterior femoral tooth, and also its more slender form.

The fifth ventral segment is twice as long as the fourth; the pygidium remotely punctured, pubescent in the male, glabrous in the female.

Taken in large numbers at Albuquerque, N. Mexico, by F. H. Wickham.

**A. xanthoenemus** n. sp.—Robust, dark piceous, with a faint æneous lustre, clothed above with coarse whitish pubescence, which becomes denser and more squamiform on the under surface. Beak long and slender, opaque (♂) or shining (♀), slightly compressed at the base; flattened, and a little wider at the apex; scrobes linear, straight and deep. Antennae slender, testaceous, inserted scarcely two-fifths from the apex; first joint of funicle long and slender, joints 2-4 somewhat elongate, subequal, 5-7 shorter; club loosely articulate, dusky. Head broadly conical, smooth, with a few small distant punctures; front sulcate between the eyes, the latter moderately convex, not or scarcely free behind. Prothorax much wider than long, strongly narrowed in front, base bisinuate; sides nearly straight behind, strongly rounded in front and constricted at the tip; surface rather densely and coarsely punctured, except anteriorly, where the punctures become smaller and more distant; transversely impressed behind the anterior margin; pubescence somewhat condensed along the median line and on the sides. Elytra broadly oval, striae deeply impressed, punctures rather large and closely approximate; interspaces convex, rugulose and irregularly punctured; scutellum densely pubescent; side pieces of thorax and abdomen finely and remotely punctured. Legs slender, thighs clavate, all armed with a small, acute tooth; base of middle and hind thighs, and distal half of all the tibiae pale testaceous, latter slender, anterior tibiae feebly bisinuate internally; tarsi slender, dusky. Long. 2.5-3 mm.; .10-.12 inch.

*Hab.*—Canada (Dr. Horn), Michigan (E. A. Schwarz), Illinois, Wisconsin (H. Ulke), Texas.

This species has been confounded with *flavicornis*, from which it is easily distinguished, aside from structural differences, by the coloration of the legs. It varies somewhat in sculpture. A specimen in my collection which I refer, with some hesitation, to the present species, has the elytra rather finely punctato-striate. It is closely related to the two following species.

**A. æneolus** n. sp.—Closely allied to the preceding, but is smaller and much less robust, blackish with æneous lustre; pubescence white and fine. Beak shorter and a little stouter, not flattened at the apex; scrobes shorter. Antennae rather stout, inserted about one-half from the apex and entirely testaceous, club slightly darker; second and third joint of funicle not elongate, former a trifle longer than the latter, following joints transverse. Eyes more strongly convex and free behind. Prothorax less coarsely and less densely punctured. Elytral

striae finely impressed, except near the base; punctures small, elongate and not closely approximate; intra-humeral spot and scutellum densely white pubescent, apical half of tibia and tarsi paler. Long. 2.1—2.5 mm.; .08—0.10 inch.

*Hab.*—Los Angeles, Cal.; Arizona; Columbus, Texas. Coll. of Mr. E. A. Schwarz and Mr. A. Bolter.

Varies somewhat in the æneous lustre; some specimens have the first two joints of the funicle a little longer than in others.

**A. faber** n. sp.—Stout, subovate, pitchy-black and rather densely clothed with coarse, grayish white pubescence. Beak not very slender, subopaque and rather coarsely striato-punctate, median carina obsolete pubescent at the base. Antennae moderately stout, rufo testaceous, club dusky; second joint of funicle longer than the third. Eyes convex, free behind. Head convex, finely rugulose, with a few, very small punctures; front with an ill-defined longitudinal sulcus and more densely pubescent. Prothorax about one-half wider than long, strongly narrowed in front, base bisinuate; sides strongly rounded, apex feebly constricted; surface coarsely and rather densely punctured; pubescence more dense on the sides and along the median line. Elytra fully one-third wider than the prothorax at base, broadly subovate, less than one-half longer than wide, and a little wider behind the middle; striae wide and deeply impressed, punctures large, rounded and very closely placed; interspaces convex, finely rugose, two rather broad and ill-defined lines of condensed pubescence extending from the sides to about the third interspace, where they coalesce; the space included between these two lines is but little less pubescent than the rest of the surface; under side punctured. Legs and tarsi less slender, rufo-piceous; femora moderately clavate, all armed with a small, acute tooth. Long. 2.5 mm.; .10 inch.

*Hab.*—Texas. Coll. A. Bolter and my own.

Resembles *xanthoemus* in size and general sculpture, but is a little more robust, antennae stouter, joints 3–7 of funicle short; the presence of a partially denuded elytral fascia surrounded by lines of pubescence and different coloration of legs.

**A. effectus** n. sp.—Subovate, pitchy-black, rather densely clothed above and beneath with grayish white or yellowish, suberect, squamiform pubescence. Beak slender, curved, more densely punctured from base to about the insertion of the antennae, more remotely punctured and shining toward the apex, with three elevated lines, sparsely pubescent. Antennae rather slender, rufo-testaceous, club dusky; second and third joints of funicle equal. Eyes convex, not free behind. Head coarsely and closely punctured; front flattened, with a long, sharply impressed longitudinal line. Prothorax wider than long, not strongly narrowed anteriorly, sides broadly rounded from the base, constricted at the apex and transversely impressed behind the anterior margin, base bisinuate; surface densely and finely punctured; the pubescence is a little more condensed along the median line and on the sides. Elytra one-fourth wider at base than the prothorax and a little wider behind the middle than at base, rather coarsely striato-punctate, punctures large and rather close; interspaces convex, punctu-

late; under surface with a few small, remote punctures. Legs and tarsi slender, rufous, femora infuscate, moderately clavate, posterior not toothed. Long. 2.8 mm.; .11 inch.

*Hab.*—California, Oregon. Mr. Ulke's collection.

The pubescence being rather coarse, squamiform, this species might be placed among those of the *squamosus* group, with which, however, it agrees less in habitus than those of the present group. One specimen from Oregon has the posterior thighs obsoletely toothed and the pubescence a little more yellowish. I cannot, however, discover any other material difference. It resembles *A. murinus*, but is more robust.

**A. scutellatus** Gyll. Pl. vi, fig. 16.—Oval, black, shining; pubescence rather fine, whitish and not dense above, with spots and lines of white scales; under surface densely clothed with white scales. Beak moderately slender, subopaque, punctured and striolate, median carina entire, indistinctly striate and pubescent near the base. Antennæ rather stout, rufo-piceous, second joint of funicle scarcely longer than the third, outer joints wider, transverse. Head somewhat conical, convex and rather coarsely punctured, each puncture bearing a hair, frontal puncture small, or nearly obsolete. Eyes feebly convex, free behind. Prothorax much wider than long, strongly narrowed in front, base feebly bisinuate, sides strongly rounded behind, apex constricted, transversely impressed behind the anterior margin; surface rather finely and not very densely punctured with a median and lateral vittæ of white scales. Elytra more than one-fourth wider at the base than the prothorax, oval, not wider behind the middle; striae wide, impressed, punctures large, approximate: interspaces rather convex, punctulate, shining; scutellum densely clothed with white pubescence, a line behind the latter, an intra-humeral line or spot, two transverse, curved and more or less interrupted lines behind the middle and enclosing a large denuded spot of dense, white scaly pubescence; the anterior transverse line extends in front along the eighth interspace. Legs and tarsi rather stout, thighs clavate, anterior and middle with a small acute tooth, posterior thighs unarmed; tibiae nearly straight, a little widened toward the apex; tarsi rufous. Long. 2.4--2.7 mm.: .10--.11 inch.

*Hab.*—Eastern and Western States.

An easily recognized and well known species; the pubescence is readily rubbed off.

A specimen in Mr. Bolter's collection is of a light brown color with the pubescence yellowish.

#### juniperinus Group.

Three dissimilar species constitute this group. In all of them the claws are armed with a small, sharp basal tooth. The abdominal segments are subequal, first and second only moderately long, third and fourth subequal, fifth short in the male; they are pubescent,

both on the upper and under surface, and the pubescence not condensed in patterns or markings.

They may be easily distinguished as follows:

Dark brown or black.

Elytra not wider behind, pubescence yellow, mesosternum not carinate.

**dissimilis.**

Elytra wider behind, pubescence very sparse, whitish, mesosternum carinate.

**orchestoides.**

Testaceous, elytra with a dark, oblique spot..... **juniperinus.**

**A. dissimilis** n. sp.—Elongate oval, brown; head, rostrum and underside of trunk nearly black, thinly clothed above with yellow pubescence, underside of thorax densely pubescent. Beak long and slender, curved, not shining, neither punctured nor striate, a few short hairs at the base. Antennæ fuscous, rather robust, inserted about the middle (♀) of the rostrum; first joint of funicle long and stout, second longer than the third; joints 3-7 rounded and gradually wider, club closely articulate. Eyes feebly convex, posterior margin not at all free. Head convex, finely rugulose, with a few small, remote, piliferous punctures, thinly pubescent between the eyes; frontal fovea small, elongate. Prothorax much wider than long; sides nearly straight behind the middle, rather strongly narrowed in front and feebly constricted at the tip; base scarcely emarginate each side, and hardly produced in front of the scutellum; surface not very densely punctured, punctures moderate. Elytra about one-fourth wider at the base than the prothorax, oblong oval, sides feebly rounded, not wider posteriorly and gradually rounded to apex, which is dehiscent; striæ moderately impressed, punctures small, approximate; interspaces slightly convex, rugulose; scut and intra-humeral spot more densely pubescent; the mesosternum is declivous in front, densely pubescent and extends a little beyond the middle between the coxæ; abdomen sparsely pubescent and finely punctured. Legs rather slender, thighs feebly clavate, anterior with a small, spiniform tooth; middle scarcely toothed; the tibiæ are slightly widened from base to apex, straight, with the articular surface very oblique and the apical armature smaller than usual; tarsi moderately slender, first joint longer than the third; claws armed with a very slender tooth, parallel with its fellow, and does not reach to the middle of the claw. Long. 3 mm.; .12 inch.

*Hab.*—Virginia.

A single ♀ in my collection found among a lot of loose material sent me years ago by Mr. H. Ulke, of Washington, and labeled "Virginia."

This species is an exact reproduction of *A. unguularis* in form, color and pubescence, but for the 7-jointed funicle, absence of elytral fascia and very slender tooth of claw, it could not possibly be distinguished. The fifth ventral segment is longer than the preceding.

**A. orchestoides** n. sp.—Elongate-ovate, black, somewhat shining, and very thinly clothed with fine, white pubescence, which is scarcely more dense on the under surface than above. Beak rather stout, slightly widened toward

the apex, with three feebly elevated lines from base to middle and finely corrugate between, remotely punctured and somewhat shining toward the apex. Antennæ stout, rufo-testaceous; first joint of funicle very robust, second longer than the third; joints 3-7 rounded. Eyes feebly convex. Head convex, impunctured, finely rugose and sparsely pubescent between the eyes; fovea feeble, elongate. Prothorax wider than long, but little narrower at the apex than at base, sides rounded, widest about the middle; base nearly straight, scutellar lobe obsolete; surface coarsely and rather closely punctured. Elytra a little wider at the base than the prothorax, subovate, widened to and more convex behind the middle, rather suddenly narrowed to and conjointly rounded at the apex; striae fine, punctures moderately small and not closely approximate; interspaces slightly convex and somewhat rugulose, pubescence scarcely perceptible; mesosternum horizontal, subcariniform between and extending as far as the posterior margin of the coxæ; under surface with a very few, small punctures. Legs rather slender; femora all armed with a sharp, distinct tooth; tibiae slender, not widened toward the apex, articular surface very oblique, terminal armature more evident than in the preceding; claws armed similarly as in *dissimilis*, but the tooth is rather shorter and a little more obtuse. Long. 1.7—2 mm.; .07—.08 inch.

*Hab.*—Maryland.

A ♂ and ♀ specimen in Mr. Ulke's collection.

In form this species is not unlike *Orchestes rufipes* Lec.

**A. juniperinus** Sanb.—Subovate, testaceous; rather densely clothed with pale yellowish pubescence. Beak darker, long and slender, shining, nearly straight and a trifle wider at the apex, striato-punctate from the base to about the middle, sparsely punctured in its distal half; scrobes commencing about the middle, straight. Antennæ slender, first joint of funicle elongate, about as long as the three following joints united, second joint longer than the third; joints 3-7 rounded, outer ones scarcely wider. Eyes rather convex, not free and surrounded by a line of yellow pubescence. Head convex, occiput finely and remotely punctured and correspondingly pubescent, more densely pubescent between the eyes; frontal fovea elongate. Prothorax wider than long, not strongly narrowed in front, sides feebly rounded; base bisinuate; surface finely and not closely punctured, pubescence equally distributed. Elytra scarcely wider at the base than the prothorax, slightly widened to behind the middle and thence strongly rounded to the apex; striae fine, feebly impressed, punctures small, not closely approximate; interspaces wide, nearly flat, rugulose; an oblique, dark, denuded spot about the middle, extending from the fourth to the second interspace; underside of trunk darker, sparsely punctured; pygidium exposed. Legs slender, femora feebly clavate, all armed with a rather large, triangular tooth; tibiae long and slender, nearly straight and but little widened towards the apex; claws blackish, tooth short, acute. Long. 2.2—2.8 mm.; .09—.11 inch.

*Hab.*—Massachusetts, West Virginia, Maryland, Georgia.

The anterior coxæ are more prominent than usual, and the ventral sutures curved slightly backward at the sides; the beak, also, in repose seems to be deflected further backward than is usual among other members of this tribe.

This species, at once recognized by its pale testaceous color and dark elytral spot, has a remarkable similarity to *Nanophyes transversus* Aubé of Southern Europe, and which, according to Desbrochers,\* was described by Chevrolat as *Anthonomus juniperi*.

#### squamosus Group.

Contains all those species with 7-jointed funicle, in which both the upper and under surface are predominantly clothed with scales. The scaly vestiture, while dense in most of the species, is sparse and intermixed with a fine pubescence in some. The scales also vary from almost round to very elongate, piliform. The ventral segments are less unequal than in the majority of the pubescent species. Some of the vittate forms show great similarity to the species of the subgenus *Chemocyllus*, from which they differ merely by the hind tibiæ of the male not being dissimilar from those of the female.

The species may be tabulated as follows :

Stout species ; all the femora armed with a tooth.

Anterior thoracic opening very oblique, prosternum short in front of the coxæ.

Elytra without transverse, partly denuded fascia.

Beak and antennæ slender ; legs reddish, or rufo-piceous.

Larger ; beak long and very slender ; first and second joint of funicle elongate.

Not densely clothed with scales, which are more or less piliform ; color pitchy-black, legs rufo-piceous.....**ater.**

Densely clothed with oval scales, reddish to rufo-piceous, legs rufous.

**squamosus.**

Smaller ; beak shorter and less slender, first and second joint of funicle less elongate .....**tectus.**

Beak and antennæ stouter, second joint of funicle scarcely longer than the third, legs dark piceous.. .....**squamulatus.**

Elytra with dark, transverse, partly denuded fascia.....**molochinus.**

Anterior thoracic opening less oblique ; prosternum more elongate in front of the coxæ.

Prothorax strongly constricted at the apex ; beak and antenna stouter, second joint of antennæ scarcely longer than the third...**rufipes.**

Prothorax not constricted at the apex ; beak and antennæ slender, second joint of funicle longer than the third.....**disjunctus.**

More or less elongate, hind femur not toothed.

Scales piliform ; elytra wider at the base than the prothorax.

Eyes as widely separated above as the width of rostrum at the base, more elongate ; prothorax scarcely wider than long.

Second joint of funicle longer than the third, scales very small and less dense .....**murinus.**

\* Op. cit. p. 446.



Second joint of funicle scarcely longer than the third, scales larger and very dense ..... **hirtus.**

Eyes less widely separated above, a little more robust; prothorax distinctly wider than long.....**ochreopilosus.**

Scales oval; elytra scarcely wider at the base than the prothorax, mottled.

**pauperculus.**

**A. ater** Lec.—Oblong oval, black, rather thinly clothed above with whitish or ashy-gray piliform scales. Beak long and slender, feebly curved, sparsely pubescent near the base, opaque and densely punctured (♂), or finely and remotely punctured, shining (♀), distinctly striate (♂), or obsoletely so (♀). Antennæ slender, rufous, clava darker; first and second joint of funicle long and slender, following joints subtrubinate, not wider than long, club densely pubescent. Eyes feebly convex, not free behind; front somewhat flattened, obscurely impressed transversely, fovea elongate. Prothorax a little wider than long, sides broadly rounded and narrowed from base to apex, latter constricted; base scarcely emarginate each side; surface densely, but not coarsely punctured, each puncture bearing a scale, which become broader and larger along the median line, on the sides and under surface; scutellum densely clothed with white scales. Elytra rather suddenly and about one-fourth wider at the base than the prothorax, suboval, a trifle wider behind; striæ fine, punctures elongate, approximate; interspaces almost flat, very slightly roughened; scales rather piliform, irregular in width and entirely concealing the derm, those of the alternate interspaces, especially the fourth and sixth, paler; underside of pectus densely covered with grayish white scales; abdomen coarsely pubescent. Legs slender, rufo-piceous; femora clavate, armed with a sharp, triangular tooth; tarsi slender, paler. Long. 3.6—5 mm.; .14—.20 inch.

*Hab.*—California, Oregon.

Closely allied to *squamosus*, from which, indeed, it differs but little structurally, except in the form and density of the scales. Comparison will show at once that it should not be placed among the pubescent species.

**A. squamosus** Lec.—Oval, reddish brown to piceous, densely covered with grayish white, or pale yellowish, oval scales; otherwise, like the preceding species, from which it differs, aside from coloration, form and density of scales, as follows: Beak reddish brown, more shining, less punctured and scarcely striate. Prothorax more distinctly wider than long. Elytra scarcely one-fourth wider than the prothorax at its base, humeri more oblique; striæ and punctures more concealed by the scales. Legs reddish brown. Long. 3.5—4.5 mm.; .14—.18 inch.

*Hab.*—Kansas, Colorado, New Mexico, California, Nebraska.

Varies considerable in form, coloration and density of the scaly vestiture. The alternate elytral interspaces are paler in some specimens, giving them a vittate appearance, more or less marked.

Two variations, deserving special mention, occur:

Var *a.*—Scales uniformly grayish white, less closely adherent to the derm. Each elytral interspace with an irregular row of suberect, setæ-like hair.

Occurs in New Mexico, California.

Var. *b.*—Smaller than the average specimens; less densely scaly, scales smaller, those of the prothorax piliform; beak of ♂ more distinctly striate.

Three specimens: Kan., Nebr. Coll. Dr. Horn and H. Ulke.

**A. tectus** Lec. —Oval, pitchy brown, densely clothed with ovate, white and yellowish gray scales. Beak shorter and less slender than in *squamosus*, curved, punctato-striolate, not shining; median carina and a stria each side more or less distinct, pubescent at the base. Antennæ somewhat robust, rufo-testaceous, club dusky; first and second joint of funicle elongate. Eyes feebly convex, not free behind. Head densely scaly, frontal fovea linear. Prothorax wider than long, narrowed from the base to the apex, latter scarcely constricted, sides feebly rounded; base slightly bisinuate; surface densely and finely punctured, punctures concealed by the scales, which are more dense along the median line and on the sides; scutellum densely scaly. Elytra rather suddenly and about one-third wider at the base than the prothorax and almost ovate in form; striæ impressed, punctures rather coarse and irregular and almost entirely concealed by the scales; interspaces feebly convex, punctulate; suture and fourth to seventh interspace from the base paler, extending furthest on the fourth and least on the seventh. Legs slender, reddish, pubescent; thighs feebly clavate, all armed with a distinct triangular tooth; tarsi slender. Long. 3–3.2 mm.; .12–.13 inch.

*Hab.*—Arizona, New Mexico, Colorado, Utah.

Only five specimens are before me. Readily distinguished from *squamosus* by its smaller size, shorter, stouter and more strongly curved beak, which is not shining. The elytra, also, are more suddenly and conspicuously wider at base than the prothorax.

**A. squamulatus** n. sp.—Subovate, black and somewhat shining, rather sparsely clothed above with small, white, broadly oval scales, intermixed with fine, suberect pubescence; under surface densely scaly. Beak short, robust, curved and widened toward the apex, subopaque, densely punctured with a median, distinct and lateral obscurely elevated line, sparsely pubescent. Antennæ robust, rufous, inserted less than one third from the buccal opening; first and second joint of funicle not slender, latter but little longer than the third, joints 3–7 transversely rounded, club darker, pubescent. Eyes more convex and slightly free behind. Head coarsely punctured, pubescent and transversely impressed above the eyes; long, impressed frontal line. Prothorax one-half wider than long, strongly narrowed in front; base feebly biemarginate, sides more strongly rounded behind the middle, apex distinctly constricted; surface densely and rather coarsely punctured, a narrow median line and lateral vitta of large, white scales, rest of the surface pubescent. Elytra broadly oval, about one-fourth wider at the base than the prothorax; humeri rounded, striæ wide, impressed; punctures rather large and not very close; interspaces convex, finely rugose and irregularly punctured; scutellum, suture, a short basal vitta on the sixth and another beginning about the middle of the fourth interspace, of dense, white scales; pygidium convex, punctured. Legs moderately stout, piceous, sparsely pubescent; thighs clavate, armed with a sharp, subspiniiform tooth;

tibiæ rather short and stout, anterior and middle strongly bisinuate internally and subangulate about the middle; tarsi not very slender. Long. 2.7 mm.; .11 inch.

*Hab.*—Wisconsin, Missouri.

Two males in my collection. A very distinct species; differs from *tectus* by its smaller size, short and robust beak, and the anterior and middle tibiæ strongly bisinuate and subangulate along the internal margin; also closely allied to *rufipes* Lec. by the form of rostrum and tibiæ, but is smaller and the prosternum is short in front of the coxæ.

**A. molochinus** n. sp.—Oval, rufo-piceous, clothed with small, pale scales, intermixed with very fine pubescence, which do not conceal the derm. Beak long and rather slender, piceous, somewhat shining, punctured; median carina and striæ each side distinct; sparsely pubescent; hairs recurved. Antennæ slender, rufo-piceous, outer joints of funicle and clava darker; first and second joints of funicle long and slender, following joints rounded, club densely pubescent. Eyes feebly convex, not free. Head black, shining, punctured, occiput sparsely, interocular space densely scaly. Prothorax nearly twice as wide as long, strongly narrowed in front and constricted at the tip: base slightly biemarginate; sides broadly rounded from the base; surface densely punctured, punctures small and superficial, each one bearing a short squamiform hair, an ill-defined median and lateral vittæ of larger scales. Elytra oval, with feeble lustre, more than one-fourth wider at the base than the prothorax; humeri rounded; striæ fine, impressed; punctures large, rounded, and not closely approximate; interspaces nearly flat, punctured; scutellar and sutural region darker; a broad, partially denuded patch each side behind the middle extending from the sides to about the fourth interspace and surrounded by a line of condensed scales; scutellum, post-scutellar line, short basal vitta on the sixth, an abbreviated vitta about the middle of the fourth interspace white; underside pitchy-black, prothorax and pectus densely scaly; abdomen thinly pubescent. Legs long and slender, rufous, thinly pubescent; femora feebly clavate, all armed with a very small, sharp, spiniform tooth; tibiæ slender, anterior feebly bisinuate; tarsi slender, reddish, third and last joint dusky. Long. 3 mm.; .12 inch.

*Hab.*—Montana. Four specimens, coll. E. A. Schwarz, H. Ulke and my own.

Very distinct; might, perhaps, with equal propriety be referred to the pubescent species, the whole habitus, arrangement of elytral vittæ, however, place it unmistakably in the present group, while the conspicuous, partially denuded elytral fascia, distinguishes the present from all the other members of the same.

**A. rufipes** Lec.—Oval, pitchy-black, antennæ and legs ferruginous, thinly clothed above with grayish scales intermixed with fine pubescence, under surface more densely scaly. Beak rather short and stout, feebly curved, slightly enlarged at the tip (♂), punctured and sparsely pubescent, distinctly carinate and

striate. Antennæ robust, second joint of funicle scarcely longer than the third, club dusky. Eyes convex, slightly free behind. Head somewhat shining, punctured and pubescent; front transversely impressed, fovea small, elongate. Prothorax much wider than long, strongly narrowed anteriorly and constricted at the apex, basal bisinuation feeble; sides strongly rounded, transversely impressed in front; surface densely and deeply punctured, especially on the sides, each puncture bearing a scale-like hair, three indistinct vittæ of broader scales. Elytra oval, about one-fourth wider at the base than the prothorax; humeri rounded, sides rounded, not wider behind, striæ well impressed, coarsely punctured, punctures round, not closely placed; interspaces feebly convex, punctulate and slightly rugulose; scutellum and alternate interspaces clothed with paler scales. Abdomen not densely pubescent. Legs stout, femora strongly clavate, all armed with a sharp, well-marked tooth; tibiæ stout and rather short, wider towards the apex, anterior strongly bisinuate internally; tarsi stout, first joint scarcely elongate; claws dusky, tooth very large. Long. 3—3.2 mm.; .12—.13 inch.

*Hab.*—Illinois (Dr. Hamilton and A. Bolter), Iowa.

The identification of this species, which was doubtful from the description as given by LeConte, has been verified by my friend, Dr. Horn, by comparison with the type in the author's collection at Cambridge.

The differentiation from *squamulatus* has been referred to under that species.

**A. disjunctus** Lec.—Oblong-oval, dark piceous, not densely clothed above with pale or brownish scales; under surface densely squamous. Beak longer and more slender than in *rufipes*; shining, finely punctured and striate, sparsely pubescent. Antennæ slender, scape and basal joint of funicle ferruginous, rest darker; second joint of funicle elongate, longer than the third. Eyes feebly convex and not free behind. Head convex, somewhat shining, coarsely punctured and pubescent, frontal fovea elongate. Prothorax a little wider than long, gradually narrowed from base to apex, feebly biemarginate at base; sides feebly rounded, not constricted at the tip; surface coarsely and densely punctured, three dorsal vittæ of white scales. Elytra oval, not wider at base than the prothorax, coarsely striato-punctate; interspaces feebly convex, punctulate, a vitta of white scales on the basal half of the sixth and another on the middle third of the fourth interspace. Legs and tarsi rather slender, brownish red; thighs feebly clavate, armed with an acute tooth; tibiæ slender, nearly straight. Long. 3.2—3.5 mm.; .13—.15 inch.

*Hab.*—Georgia, Texas, Maryland, New Jersey.

Some specimens are clothed uniformly with white scales with scarcely an indication of vittæ.

**A. murinus** n. sp.—Oblong-elliptic, black, above not densely clothed with uniform, grayish white scales, which are small on the elytra and larger on the upper and under surface of the prothorax and pectus, where they become also more dense. Beak not very slender, cylindrical, curved, subopaque, finely punc-

tured and pubescent; a median and lateral elevated line, not very marked. Antennæ inserted remotely from the apex, rather stout, scape and first joint of funicle bright rufous, remainder fuscous; second joint of funicle longer than the third, following joints rounded. Eyes feebly convex, entirely lateral and widely separated above. Head densely punctured and pubescent; frontal fovea narrow, elongate. Prothorax scarcely wider than long, gradually narrowed from base to apex; base almost straight each side; sides very feebly rounded, apex slightly constricted and transversely impressed behind the anterior margin; surface densely, deeply, but rather finely punctured, and rather densely clothed with scales, which are larger than those of the elytra. Elytra rather suddenly and about one-third wider at base than the prothorax, elongate, sides almost parallel, gradually narrowed posteriorly, coarsely striato-punctate, punctures round, approximate; interspaces convex. Legs rufo-piceous, moderately slender, thighs not strongly clavate, anterior armed with a very small triangular tooth, middle and posterior mutic; tarsi slender, rufous; ventral segments 3-5 of male equal and separately, but little shorter than first or second; third and fourth segment of female shorter, fifth longer, rounded. Long. 3-3.5 mm.; .12-.14 inch.

*Hab.*—Oregon (H. Ulke), Colorado (Dr. Horn).

Two males and one female are before me. Closely allied to *hirtus*, but is less densely scaly above and the second joint of funicle is distinctly longer than the third. Not unlike *A. effetus* in form and coloration, but is a little more elongate, and the vestiture consists of true scales, while in the former it consists of suberect, scale-like pubescence.

**A. *hirtus*** Lec.—Of the same form and sculpture as the preceding, but a little smaller and densely covered with grayish or ochreous scales, which completely conceal the color of the derm, which varies from rufo-ferruginous to pitchy-black. Antennæ and legs rufo-ferruginous; the beak is more slender and scarcely striate or punctured; the second joint of funicle is scarcely longer than the third; three thoracic vittæ and along the suture paler, each elytral interspace with a row, more or less irregular, of short, suberect, piliform scales. Legs and tarsi as in *murinus*. Long. 2.8-3 mm.; .11-.12 inch.

*Hab.*—California, Arizona, Utah.

The scales vary in form from broadly oval to piliform. The suberect, scale-like hairs of the interspaces are almost obsolete in some specimens. Resembles also the next species.

**A. *ochreopilosus*** n. sp. Pl. vi, fig. 17.—Oval, less elongate than the preceding, rufo-piceous, upper and under surface densely clothed with ochreous, lanceolate, suberect scales. Beak a little shorter and less slender than in *hirtus*, curved and a little widened at the apex; shining, punctured and thinly pubescent, median elevated line not distinct. Antennæ ferruginous, moderately slender; second joint of funicle longer than the third. Eyes somewhat convex, less widely separated above than the base of the beak. Head short, punctured, and densely pubescent; frontal fovea elongate. Prothorax about one-half wider than

long, strongly narrowed anteriorly, apex not constricted, base bisinuate, sides rounded; surface densely and deeply punctured. Elytra oval, about one-fourth wider than the prothorax at base; humeri rounded, sides gradually rounded to apex, striate and punctured, punctures large, concealed by the scales; interspaces wide, flat, each elytron with several ill-defined, elevated lines. Abdomen less densely pubescent. Legs ferruginous, moderately stout, pubescent; femora clavate, anterior and middle armed with a small, acute tooth; tibiae less slender, anterior bisinuate internally, terminal hooks curved and projecting beyond the extremity; tarsi slender, first and second joint scarcely elongate, last joint slender and almost as long as the three preceding joints together. Long. 2.6 mm.; .10 inch.

*Hab.*—California.

Two females in Mr. Ulke's collection.

Might easily be mistaken for *hirtus*; in fact, the descriptive phrase, as given by LeConte of that species, "densely clothed with coarse, scarcely squamiform, ochreous pubescence," applies far better to the species under consideration; it is, however, less elongate, the eyes slightly encroaching upon the front, the prothorax distinctly wider than long, the thighs more strongly clavate, and both anterior and middle armed with a tooth. The peculiar curved projection of the terminal hook of the anterior and middle tibiae I do not remember of having observed in any other species. One of the specimens has a strongly marked, oblique impression each side of the prothorax. The unusual occurrence of this kind of sculpture in the present tribe is no doubt due to some disturbance in the earlier stages.

**A. pauperculus** Lec. Pl. vi, fig. 18.—Oblong-elliptic, rufo-piceous, densely clothed above and beneath with large, round, grayish white scales, mottled with brown on the upper surface. Beak moderately long, not slender, regularly curved; opaque (♂), or feebly shining (♀), striato-punctate, median elevated line distinct, pubescent at the base. Antennae stout, rufous; first joint of funicle very stout, second not elongate, outer joints gradually wider, rounded, and like the club, darker. Eyes moderately convex, posterior margin not free. Head densely scaly, front with linear impression. Prothorax wider than long, gradually narrowed from the base, latter feebly bisinuate; sides broadly rounded, broadly, but feebly constricted at the apex; surface coarsely and closely punctured, punctures concealed by the scales, a broad brown stripe each side of the median line, latter and sides paler. Elytra oblong-oval, a little wider at the base than the prothorax; humeri oblique, sides broadly rounded to apex; striae wide, impressed, punctures moderately large, not closely approximate and concealed by the scales, which are predominantly brownish in color; scutellum, periscutellar space, an irregular oblique stripe extending from humerus to about the middle of the suture, and an indistinct, transverse, posterior fascia, paler. Legs and tarsi long and slender, pale rufous; thighs slender, infusate about the middle, anterior feebly, but distinctly toothed; tibiae slender, nearly straight. Long. 2.2–2.4 mm.; .09–.10 inch.

*Hab.*—California.



The fifth ventral segment is not elongate. Varies in coloration, the markings becoming more distinct as the brown color predominates.

subfasciatus Group.

The species which I have included in this group have the funicle consisting of but six joints and the claws armed as usual with a long tooth. The species are of small size, and are to be distinguished as follows:

Brown, pubescent species; partially denuded, elytral fascia.

Front not foveate; fascia not reaching the suture.....**latiusculus.**

Front foveate; fascia extending to the suture.....**subfasciatus.**

Black, squamous species, no elytral fascia.

Beak longer and more slender .....**robustus.**

Beak shorter and stouter.....**moleculus.**

**A. latiusculus** n. sp.—Robust, subovate; brown, thinly clothed with dirty white pubescence. Beak long, moderately slender, feebly curved, not shining, median carina and stria each side extending from the base to about the middle, pubescent at the base. Antennæ moderately slender, testaceous; first and second joints of funicle elongate, former stout, latter slender and longer than the third, which is a little longer than the fourth; joints 4–6 short, round; club dusky, closely articulate. Eyes convex, posterior margin free. Head convex, finely and remotely punctured and pubescent, rugulose; front not foveate. Prothorax much wider than long, narrowed from base to apex, latter broadly constricted, sides regularly rounded, base feebly biemarginate; surface not very densely punctured, punctures moderate; scutellum densely pubescent. Elytra much wider at the base than the prothorax, broadly ovate; humeri rounded, widest behind the middle and rather suddenly narrowed to apex; striæ feebly impressed, except the first and second, punctures moderately large, not closely placed, larger and closely approximate in the first and second striæ; interspaces rather wide, feebly convex, almost smooth, with feeble lustre, finely and remotely punctulate, transverse fascia not very obvious, extending from the sides to about the third interspace and surrounded, as usual, by a line of condensed pubescence, suture darker; under surface remotely punctulate and sparsely pubescent; ventral segments transversely striate, first and second moderately long, third to fifth segments gradually shorter. Legs moderately slender; anterior and middle femora clavate, feebly toothed, posterior more slender, tooth obsolete; tibiæ rather stout, gradually widened from base to apex, distal half and tarsi paler, latter stout, first and second joints not elongate, third bilobed, fourth short and stout, claws armed with a long and slender tooth. Long. 2 mm.; .08 inch.

*Hub.*—Texas, Virginia.

A ♂ and ♀ specimen are before me. Dr. Horn's and my own collection.

The general habitus and abdominal formation is that of the *signatus* group, and resembles somewhat *musculus*, but is much broader and more robust.

**A. subfasciatus** Lec.—Similar to the preceding, but less robust, reddish brown, with the pubescence yellowish and more conspicuous. Beak a trifle more slender, second joint of funicle not slender, longer than the third; third and fourth joints short, equal. Eyes and head as in the preceding, but the front is distinctly foveate. Prothorax a little longer, less transverse, apical constriction less pronounced, pubescence conspicuous and somewhat condensed along the median line; the elytra are less conspicuously wider at the base than the prothorax, the striae a little more coarsely punctured, the first and second not more so than the rest; the denuded fascia is more evident, and extends from the sides to the suture; under surface more densely pubescent. Legs a little more slender; tibiae, except the posterior, scarcely widened towards the tip. Long. 1.5–2 mm.; .06–.08 inch.

*Hab.*—New York, Canada, New Hampshire, Texas.

The elytra are generally paler, testaceous, but a specimen in Mr. Ulke's collection is of a dark brown color, thereby greatly resembling *latiusculus*.

**A. robustulus** Lec.—Broadly oval, black, sparsely covered with small, dirty white, cuneiform scales, which are a little larger and more condensed on the underside of the thorax. Beak long and slender, slightly widened toward the tip, punctured and finely striate from the base, scarcely pubescent. Antennae fuscous, end of scape and first joint of funicle testaceous, second and third joints of funicle equal, and together a trifle longer than the three following joints together. Eyes nearly flat, scarcely free behind. Head convex, finely and remotely punctured, rugulose and thinly pubescent; frontal fovea distinct, elongate. Prothorax much wider than long, markedly narrowed from base to apex, the latter feebly constricted, sides rounded; surface rather convex, densely and rather coarsely punctured, each puncture bearing a piliform scale, which, however, become broader on the sides; base scarcely emarginate each side. Elytra but little longer than wide and about one-fourth wider at the base than the prothorax, feebly rounded on the sides and rapidly narrowed to the tip, strongly convex and declivous behind; striae impressed, punctures elongate and closely approximate, coarser at the base; interspaces flat, scales arranged in three or four irregular rows; scutell and sutural interspace more densely scaly. Abdomen punctured; segments 1–2 about equal, moderately long, 3–5 short, equal; pygidium freely exposed. Legs ferruginous to dark piceous, moderately stout; femora feebly clavate, anterior and middle armed with a very small, acute tooth, posterior mutic; tibiae slightly widened toward the apex; tarsi not slender, claws armed with a long tooth. Long. 1.8–1.2 mm.; .07–.08 inch.

*Hab.*—Nebraska, Montana, District of Columbia.

A specimen in Mr. Bolter's collection and one in my own, which I received from that gentleman some years ago, differ from the above description in the following points: Larger, the scales are larger, white; antennae entirely testaceous, joints 2–4 of funicle equal in length, fifth and sixth wider. Prothorax depressed each side at the base, punctures smaller and more remote; elytra more finely striato-punctate. Long. 2.2 mm.; .09 inch. *Hab.*—Montana. Both speci-

mens are badly abraded, but what remains of scales seems to indicate that they are more dense and more closely adherent to the surface. I do not feel justified in considering it specifically distinct until increased and better material shall prove it to be so.

**A. moleculus** Casey.—Closely allied to *robustus*, with which it agrees in form and vestiture, and from which it differs in the following characters: Beak shorter and relatively more robust; antennæ entirely testaceous, except the club, which is darker; second and third joints of funicle not elongate, equal, and together shorter than the following three joints; the head is more densely scaly, frontal fovea not well defined, elongate. Prothorax less closely punctured, punctures smaller; hind angles somewhat depressed; the femoral tooth is extremely small. Legs pitchy-black; tibiæ scarcely widened towards the tip and like the tarsi, paler. Long. 1.5—1.8 mm.; .06—.07 inch.

*Hab.*—District of Columbia, Maryland, Illinois, Wisconsin.

#### ungularis Group.

The three species constituting this group are readily distinguished by the 6-jointed funicle and the claws armed with a short, inconspicuous tooth; they are elongate in form; the elytra have a transverse denuded fascia.

They are easily distinguished as follows:

Beak long and slender, thighs toothed, pubescent.

Larger, femora feebly clavate, pubescence yellow.....**ungularis.**

Smaller, femora strongly clavate, pubescence white.....**floralis.**

Beak short and stout, thighs not toothed, squamous.....**umbilus.**

**A. unguarlis** Lec.—Elongate, chestnut-brown, underside of trunk piceous, thinly clothed with coarse yellowish pubescence, which is more dense and squamiform on the thoracic side pieces. Beak: male shorter and more robust, feebly curved, naked without lustre, alutaceous with a fine stria each side from base to middle; female long and slender, shining, finely alutaceous, not striate; scrobes commencing about two-fifths from the apex; in both sexes there is a slight enlargement at the insertion of the antennæ. Antennæ stout, fuscous, scape short, first joint of funicle short, second slender and longer than the third, which is a little longer than the fourth, joints 4-6 rounded, club closely articulate, entirely pubescent. Eyes feebly convex. Head alutaceous, sparsely pubescent; frontal fovea small, elongate. Prothorax wider than long, narrowed from base to front, sides broadly rounded and scarcely constricted at the apex; base feebly emarginate each side; surface closely, deeply and rather coarsely punctured, each puncture bearing a yellow hair. Elytra elongate, nearly one-third wider at base than the prothorax; sides nearly straight for two-thirds their length, thence gradually rounded to apex; striae fine, superficial, except the sutural one, which is more deeply impressed; punctures moderate, elongate, not very close; interspaces nearly flat, smooth, remotely punctulate; scutellum densely pubescent; transverse fascia not very conspicuous, surrounded by a line of pubescence; under surface densely punctured; ventral segments subequal, fifth of ♂ shorter than

the fourth. Legs slender, thighs feebly clavate, all armed with a small tooth, which is almost obsolete on the hind pair; tibiae almost equal in width; tarsi moderately slender, claws armed with a very small, but distinct, basal tooth. Long. 2.3—2.8 mm.; .09—.11 inch.

*Hab.*—District of Columbia, Florida, Michigan.

The prothorax is darker, even piceous, in some specimens.

**A. floralis** n. sp.—Smaller and narrower than the preceding, ferruginous to piceous and clothed with white, coarse pubescence. The beak is slender and nearly equal in both sexes, finely and remotely punctured and striolate, feebly curved; scrobes commencing about two-fifths (♂) or one-half (♀) the length from the buccal opening; scape of antennae longer, second joint of funicle a little longer than the third. Eyes and head as in *ungularis*, front with a few rows of fine, remote punctures, each one bearing a short white hair, a straight line of white pubescence along the inner margin of the eyes. Prothorax less narrowed in front and not constricted at the apex; sides more strongly rounded; surface coarsely, but not densely punctured, pubescence more concentrated along the median line and on the sides. Elytra one-third wider at base than the prothorax; striae wider, more deeply impressed; punctures larger, rounded; interspaces slightly convex, rugose; under surface as in *ungularis*. Legs stouter, femora more strongly clavate, all toothed; tibiae shorter and stouter; the tarsi are broader and shorter, and the claws armed with a somewhat longer and acute tooth, than in that species. Long. 2.—2.5 mm.; .08—.10 inch.

*Hab.*—Florida, North Carolina. Coll. E. A. Schwarz and H. Ulke.

A specimen in Mr. Ulke's collection, from North Carolina, is larger (2.5 mm.) than the average, more coarsely sculptured and of a pitchy black color with the pubescence very conspicuous; it does not appear to be distinct.

**A. nubilus** Lec.—Elongate elliptic, ferruginous to rufo-piceous and clothed with small, yellowish white scales intermixed with a fine, suberect pubescence. Beak short, robust and imperceptibly tapering from base to apex, more strongly curved near the base, finely punctured and obscurely striate; scrobes curved with the concavity upward, approximate underneath. Antennae robust, rufo-testaceous, club dusky, inserted one-third (♂) or one-half (♀) from the apex, second joint of funicle scarcely longer than the third; joints 3-6 rounded. Eyes moderately convex, posterior margin free. Head remotely punctulate with a few hairs; front flattened, fovea variable, an obscure transverse impression above the eyes. Prothorax wider than long, moderately narrowed anteriorly, sides broadly rounded, scarcely constricted at the apex; surface coarsely, but not very closely punctured. Elytra wider at base than the prothorax, sides feebly rounded, gradually narrowed to and conjointly rounded at the tip; striae wide, moderately impressed; punctures coarse, interspaces convex, rugulose; a broad, oblique stripe and declivity more densely scaly, suture darker; underside moderately punctured, thorax densely. Abdomen sparsely pubescent; last ventral segment longer than the preceding in both sexes and the pygidium but little exposed in the male and not at all in the female. Legs and tarsi moderately stout, thighs

feebly clavate, not toothed; tibiæ a trifle widened toward the apex, each tarsal joint with a few, white hairs arising near the apical extremity, claws armed with a very small, almost imperceptible tooth. Long. 1.8--2.2 mm.; .07--.09 inch.

*Hab.*—Florida, North Carolina.

The following variety deserves special mention: Larger and darker; frontal fovea sulciform, deeply impressed; the scaly vestiture more conspicuous; scutellum, scutellar and intra-humeral spots very densely scaly. Long. 2.7 mm.; .11 inch. Occurs in District of Columbia, Florida, Texas, Pennsylvania.

#### Subgenus *Cnemocyllus*.

Under this subgeneric name I have included all those species which have the posterior tibiæ dissimilar in the two sexes, those of the male being more or less curved, while in the female they are straight, or nearly so. This curvature varies greatly, being most marked in *ornatulus* and *figuratus*, and least in *ligatus*. The fifth ventral segment is more or less elongate, except in *subvittatus*, *ornatulus* and *figuratus*, and very long in *inermis*. The tarsi are never short and broad, but are very long and slender in a few species. The tooth of claw varies considerably in development. The form varies from oval to elongate, and the integument is clothed with scales, which, in most of the species, form lines or vittæ after a common pattern, as follows: A pale line on the fourth interspace commencing about the middle and variable in extent, another vitta on the sixth interspace commencing at the base and extending to about the middle; in addition to these there is in some a darker patch or fascia on the sides behind the middle. The prothorax is generally vittate; the funicle of the antennæ is either 6- or 7-jointed.

The species occur in the Western and Southern States, are closely related, and require great care to be distinguished. The following table, supplemented by the descriptions and figures given, will, however, enable the student to positively identify them.

Funicle 7-jointed.

Fifth ventral segment of male not, or but slightly elongate.

Larger, posterior tibiæ of ♂ feebly curved, claws armed with a long slender tooth. Plate vi, fig. 19. .... ***subvittatus*.**

Smaller, posterior tibiæ of ♂ strongly curved, tarsi long and slender, claws moderately toothed.

Thorax shorter and more strongly narrowed anteriorly, tarsi as long as the tibiæ. Plate vi, figs. 20*a* and 20*b*. .... ***ornatulus*.**

Thorax longer and less narrowed in front, tarsi shorter than the tibiæ. Plate vi, fig. 21*a* ..... ***figuratus*.**

Fifth ventral segment of male very long, claws armed with a long tooth. Pl. vi, fig. 22*a* ..... ***inermis*.**

Funicle 6-jointed, fifth ventral segment of ♂ elongate.

Scales white, or pale; vittæ, if any, not conspicuous, claws armed with a large tooth, approximate to its fellow.

Second joint of funicle elongate, longer than the third.

Larger, 3.5 mm.; elytra not vittate..... **Jacobinus.**

Smaller, scarcely exceeding 2.6 mm.

Scales smaller, elytra vittate..... **decipiens.**

Scales large, elytra not vittate..... **canus.**

Second joint of funicle not, or scarcely longer than the third.

Larger (2.0—2.3 mm.), sides more rounded, scales smaller..... **affinis.**

Smaller (1.5—1.7 mm.) and more narrow, scales larger..... **nanus.**

Scales more or less brown, conspicuously vittate with pale scales.

Larger, claws armed with a broad tooth, third joint of funicle longer than the fourth.

Sides of prothorax nearly straight behind, elytra wider at base than the former, hind tibiæ of male distinctly curved, tooth of claw moderately long and not obtuse. Plate vi, fig. 23a..... **elongatus.**

Prothorax rounded on the sides, elytra not wider at base than the former, hind tibiæ of male nearly straight, emarginate, tooth of claw short, obtuse. Plate vi, fig. 24a..... **ligatus.**

Smaller, claws armed with a long and slender tooth, third joint of funicle not longer than the fourth..... **lineatulus.**

**A. subvittatus** Lec. Plate vi, figs. 19, 19a.—Elongate-oval, pitchy-brown, above densely clothed with elongate, brownish scales intermixed with white. Beak long, not very slender, feebly curved, median carina and stria each side well marked, striolate and punctured, punctures large and superficial. Antennæ slender, rufous first joint of funicle long and slender, second and third joints slightly elongate, equal, and together not as long as the former, joints 4–7 rounded, outer ones not wider, clava darker, pubescent. Eyes feebly convex and somewhat free posteriorly. Head punctured, densely clothed with lanceolate scales, front flattened, fovea elongate. Prothorax a little wider than long, narrowed from base to apex, sides feebly rounded and scarcely constricted at the apex; surface coarsely and deeply punctured and clothed with brown, elongate-oval scales and three narrow lines of white scales. Elytra distinctly wider at the base than the prothorax: humeri rounded; sides nearly straight for one-half their length, thence gradually narrowed to apex; striae impressed; punctures moderate, approximate; interspaces slightly convex, punctulate and slightly rugose; scutellum, scutellar line, fourth interspace from the middle, sixth from the base and to a variable extent, covered with whitish scales; a large denuded patch each side behind the middle; under surface clothed with coarse, whitish pubescence. Legs and tarsi long and slender, reddish; femora scarcely clavate, anterior feebly dentate; tibia slender, posterior of male curved in their distal half and slightly dilated at the tip, those of the female straight; tarsal claws divergent and armed with a long, slender tooth. Long. 2.8–3 mm.; .11–.12 inch.

*Hab.*—California. Coll. Dr. Horn.

The fifth ventral segment is not longer than the preceding, the pygidium exposed in both sexes; the tooth of claw is very slender and more conspicuous than in the next species.



**A. ornatulus** n. sp. Plate vi, figs. 20, 20a, 20b.—Elongate subovate, piceous, antennæ and legs reddish, densely clothed with broadly oval scales, white and brown on the upper surface and entirely white beneath. Beak rather long and slender, regularly curved and somewhat shining, punctured and substriate from base to middle with the median carina distinct. Antennæ slender, first and second joints of funicle long and slender, latter much longer than the third; following joints rounded, outer ones a little wider, club dark. Eyes moderately convex, placed more anteriorly on the head, than usual, posterior margin free. Head wide, short and deeply immersed into the thorax, punctured and clothed with large, elongate scales; front scarcely convex, fovea obsolete. Prothorax wider than long, moderately narrowed anteriorly, base nearly straight each side; regularly rounded from base to apex, feebly impressed in front; surface densely and coarsely punctured, punctures deep and concealed by the scales; disc brown, with a narrow median line, and on the sides pearly white, latter with a few, scattered, brownish scales. Elytra oval, scarcely wider at the base than the prothorax; sides moderately rounded from base to apex; striæ and punctures concealed by the scaly vestiture; interspaces wide, flat; large periscutellar space, somewhat heart-shaped, and a large, rounded blotch each side behind the middle, brown; rest of surface pearly white, intermixed with scattered, brown scales, especially on the declivity. Abdomen clothed with piliform scales; segments 3-5 about equal in length. Legs slender, clothed with white scales; thighs slender, anterior with a scarcely perceptible tooth; tibiæ straight, posterior of the male almost angularly curved near the distal extremity; tarsi very slender and as long as the tibiæ, first joint longer than the second (♂), or equal to it (♀); last joint very long, distal end and claws blackish, latter armed with a rather short and obtuse tooth. Long. 2.3 mm.; .09 inch.

*Hab.*—California.

A female specimen in Dr. Horn's and a male specimen in my collection. A very distinct species, not unlike dark colored specimens of *paupereulus*, from which, however, it is distinguished aside from structural differences by its bright ornamentation, more transverse thorax, elongate second joint of funicle, very long tarsi and short tooth of claw. For differentiation from *figuratus* the student is referred to that species.

**A. figuratus** n. sp. Plate vi, figs. 21, 21a.—Very similar in form, color and vestiture to the preceding, but a little larger, and the scales less closely applied to the derm, and therefore more easily removable; the beak a little longer and more robust at the base, with the sculpture more pronounced; the eyes are placed more laterally; the prothorax but little wider than long, with the punctures smaller and more crowded; the elytral striæ, denuded of the scaly vestiture, are fine, but well impressed, becoming wider and deeper near the base; the punctures small and closely approximate; interspaces nearly flat, except at the base, punctured and somewhat rugose; the coloration is almost identical, but less sharply defined, the broad white stripe dissolved into two vittæ. Legs a little darker, thighs infusate about the middle; tibiæ longer, anterior more bisinuate internally and the posterior of male even more strongly curved than in that species; the tarsi are slender, and shorter than the tibiæ. Long. 2.5 mm.; .10 inch.

*Hab.*—California.

Three males are before me; one well-preserved specimen in Mr. Schwarz's collection and two abraded ones from Santa Monica, L. Cal., in mine. The fifth ventral of the male is a little longer than the fourth.

**A. inermis** Boh. Plate vi, fig. 22.—Elongate-oval, ferruginous, densely clothed above and beneath with large, broadly oval, white, or grayish white scales. Beak moderately long and slender, curved and scarcely pubescent; three elevated lines from base to middle, with corresponding striæ between; scaly at the base. Antennæ rather stout, second joint of funicle not longer than the third; club dusky. Eyes feebly convex, posterior margin slightly free. Head punctured and densely scaly, frontal fovea elongate. Prothorax longer than wide, narrowed in front; sides rounded, feebly constricted at the apex and transversely impressed behind the anterior margin, closely and rather finely punctured. Elytra elongate-oval, more than one-fourth wider at the base than the prothorax; sides feebly rounded; striæ impressed, punctures rather large, rounded and closely approximate; interspaces slightly convex. Legs and tarsi slender, femora feebly clavate, anterior with a small, scarcely perceptible tooth; tibiae slender, posterior of male feebly curved, fifth ventral segment of male almost as long as the two preceding segments united. Long. 2.2—2.5 mm.; .09—.10 inch.

*Hub.*—California.

I am not at all certain about the identity of this species, as LeConte describes the thighs as being unarmed. I have only four specimens before me, in all of which the tooth of the anterior pair is discernible, but it is quite possible that, on account of its small size, it had been overlooked by that author. Two specimens in Dr. Horn's collection have the upper surface somewhat mottled with brownish scales.

**A. jacobinus** n. sp.—Oblong-elliptic, piceous, antennæ and legs ferruginous, densely clothed above and beneath with moderately large, whitish scales. Beak not very slender, feebly but regularly curved, opaque (♂), or somewhat shining (♀), indistinctly carinate and striate; scrobes straight. Antennæ slender, inserted two-fifths (♂) or one-half (♀) from the apex, funicle 6-jointed, first joint not very robust, elongate; second joint longer than the third. Eyes feebly convex, scarcely free behind. Head wide, and like the beak at base, densely scaly, irregularly punctulate; frontal fovea small, punctiform. Prothorax a trifle wider than long, moderately narrowed in front, but scarcely constricted at the apex, sides nearly straight behind the middle, feebly emarginate each side at base; surface densely and rather coarsely punctured; scales more condensed along the middle and on the sides. Elytra a little wider at the base than the prothorax; sides nearly parallel for one-half their length, thence gradually rounded to apex, which is moderately debiscent; striæ wide, impressed, punctures large, rounded, and not closely approximate; interspaces convex, rugulose; scales a little more condensed on the basal third of the sutural and sixth interspace; underside of body densely punctured. Legs moderately slender, femora not strongly clavate, anterior with a very small, acute tooth, middle and posterior mutic; tibiae not very slender and rather short, anterior and mid-

dle biemarginate internally, posterior of male distinctly curved, of female nearly straight; pygidium freely exposed in the male, feebly so in the female. Long. 3.5 mm.; .14 inch.

*Hab.*—Colorado.

A male and female specimen in my collection only very recently received. This species resembles *canus* very closely in form and coloration; it differs, however, by its greater size, smaller and more densely placed scales, the elytra more gradually rounded to the apex, the pygidium more freely exposed, and the hind tibiæ of the male strongly curved; the fifth ventral segment is longer than the preceding in both sexes, especially the female.

**A. decipiens** Lec.—Elongate-oblong, pitchy-brown, antennæ and legs ferruginous, densely clothed above and beneath with large, oval, grayish white scales, which, however, on the abdomen become piliform. Beak long, curved and moderately slender, shining, rather coarsely punctured near the base, three ill-defined, elevated lines. Antennæ somewhat stout, second joint of funicle elongate, slender and longer than the third, which is a trifle longer than the fourth, club dusky. Eyes almost flat, posterior margin slightly free. Head convex, punctured and densely squamose; an impressed frontal line extending upon the base of the rostrum. Prothorax one-third wider than long, sides feebly rounded, subparallel behind, strongly narrowed and distinctly, though not suddenly constricted at the apex; surface densely, though not coarsely punctured, indistinctly trivittate. Elytra a little wider at the base than the prothorax, oblong-oval, almost parallel on the sides, gradually rounded to apex behind, coarsely striatopunctate, striæ broad and deep, punctures large, oblong and closely approximate; interspaces convex, roughened; with the scaly covering intact, the latter appear wide and flattened, and the striæ and punctures not entirely concealed. Legs moderate, femora feebly clavate, anterior feebly toothed; tibiæ slender, anterior and middle slightly bisinuate internally, posterior of male regularly, but not strongly curved; tarsi slender. Long. 2—2.2 mm.; .08—-.09 inch.

*Hab.*—Texas, Kansas, Oregon, Washington.

The pygidium is more or less freely exposed, and the fifth ventral segment longer than the fourth in both sexes, though more markedly so in the male, while it is foveate in the female. In well-marked specimens a posterior pale vitta on the fourth and an anterior one on the sixth interspace, as well as a post-scutellar line are more conspicuous; the darker, lateral space is generally ill-defined.

**A. canus** Lec.—Closely allied to the preceding species; elliptic, pitchy-brown, densely clothed with very large, broadly oval, and uniformly white scales; it differs as follows: Beak more slender and shining, more finely sculptured, slightly widened and somewhat depressed at the apex. Prothorax but little wider than long, regularly rounded from base to apex, latter not constricted. Elytra more broadly rounded on the sides; striæ and punctures still coarser; punctures more transverse and very narrowly separate. Legs, especially the

tibiæ, a little stouter; posterior tibiæ of male feebly curved. Long. 2—2.6 mm.; .08—0.10 inch.

*Hab.*—Arizona, California, Texas.

The pygidium is but little exposed in the male and entirely concealed in the female. The remarkably large scales appear, under a moderate magnifying power, slightly concave.

**A. affinis** Lec.—Of the same form and coloration as *canus*, but a trifle smaller; the second and third joints of funicle a trifle elongate, equal in length; the scales are smaller in size; tibiæ more slender, and the posterior of the male regularly curved. Long. 2—2.3 mm.; .08—0.09 inch.

*Hab.*—Texas, Arizona, New Mexico, California.

The pygidium is more freely exposed in both sexes; fifth ventral segment markedly longer than the fourth, especially in the male.

**A. nanus** Lec.—Elongate, subparallel; black, legs rufous, clothed with rather large, grayish white scales. Beak long and stout, curved, shining, with several rows of punctures each side of the median carina, scaly at the base; scape and basal joint of funicle reddish, rest of antennæ darker, piceous, second and third joints of funicle somewhat elongate, equal in length. Eyes nearly flat, not at all free. Head convex, coarsely punctured and densely squamous, frontal fovea small. Prothorax a little wider than long, scarcely narrowed in front and not constricted at the apex; base bisinuate, sides feebly rounded; surface densely punctured and squamous. Elytra elongate, but little wider at the base than the prothorax, sides scarcely rounded, broadly rounded at the apex; striæ coarse, punctures large and rather remote; interspaces convex, rugulose. Legs moderately stout, thinly scaly; anterior femora more strongly clavate, middle and posterior scarcely at all; tibiæ slender, almost straight, posterior of male moderately and regularly curved; tarsi and claws as in the preceding. Long. 1.5—1.7 mm.; .06—0.07 inch.

*Hab.*—Arizona, New Mexico.

The fifth ventral segment of male is scarcely one-half longer than the fourth and of about equal length in the female. The pygidium is freely exposed in the male and not at all in the female.

**A. elongatus** Lec. Plate vi, figs. 23, 23a.—Strongly elongate, nearly parallel, pitchy-brown, clothed with large, rounded, pale brown and whitish scales. Beak moderately long and slender, curved, subopaque and a little widened from base to apex; median carina distinct, substriate each side. Antennæ slender, rufo-testaceous, funicle 6-jointed, second and third joints subequal; joints 4–6 oblong, club darker. Eyes feebly convex, posterior margin free. Head slightly convex, punctured and scaly, front with impressed line. Prothorax convex, slightly narrowed in front, base bisinuate; sides nearly straight posteriorly, feebly rounded in front, apex scarcely constricted and transversely impressed behind the anterior margin; surface densely punctured, a median and lateral vittæ of pale scales. Elytra a little wider at the base than the prothorax, a trifle widened to behind the middle, sides nearly straight for two-thirds their length, thence narrowed to and broadly rounded at the tip; striæ wide and deep, more

so toward the base, punctures coarse, elongate, not very closely placed; interspaces somewhat convex, punctured and transversely strigose; the scales are predominantly white, condensed each side of the scutellum, along the base and on the sixth interspace from base to near the middle, the posterior denuded fascia almost reaches the suture, and is surrounded by a broad stripe of white scales, including a short white line on the fourth interspace. Legs slender, ferruginous, thighs feebly clavate, anterior armed with a small acute tooth; tibiae stout, bisinuate internally and curved inward near the apex, posterior of male more strongly curved and somewhat enlarged at the apex; tarsi moderately stout, claws armed with a broad tooth. Long. 2.5—3 mm.; .10—.12 inch.

*Hab.*—District of Columbia, Illinois, Nevada, Florida, Georgia.

Last ventral segment of female foveate.

Dr. Horn, who, in this instance also, has kindly made the comparison with the type in the LeConte collection at Cambridge, has found the funicle to consist of only six joints and not seven, as erroneously stated by LeConte, and which had led me to doubt the identity of the present species with the one described by LeConte.

This species is very closely related to the following, with which it has heretofore been confounded in collections. A specimen from Jacksonville, Fla., in Mr. Schwarz's collection, I refer, with some doubt, to the present species; it has the beak a little shorter and stouter, the second joint of funicle a little shorter than the third, outer joints wider; the elytra a little wider at the base and not wider posteriorly, sides feebly rounded, punctures close set and somewhat transverse, interspaces more roughened, and the anterior femora more strongly clavate; it is entirely denuded of scales.

**A. ligatus** n. sp. Plate vi, figs. 24, 24a, 24b.—Very closely resembles *elongatus* in form, sculpture and coloration, and is distinguished from that species by the following characters: the second and third joints of the funicle are a little more slender and of nearly equal length; the prothorax more strongly rounded at the sides and more narrowed anteriorly. Elytra not wider at the base than the prothorax with the sides a little more rounded; the scales are of a more yellowish color instead of the white, and less easily removed, the markings less marked; the dark denuded fascia extends from the sides to about the fourth interspace; the tibiae are more slender and the posterior of the male simply emarginate along the internal margin and entirely straight in the female. Long. 2.4—2.7 mm.; .10—.11 inch.

*Hab.*—Arizona. Collection of Dr. Horn.

The claws are armed with a rather short and obtuse tooth.

**A. lineatulus** n. sp. Plate vi, fig. 25.—Long elliptic, pitchy-brown, antennae and legs testaceous, clothed with large, grayish or brown, closely adherent scales. Beak long and rather stout, curved, slightly widened and somewhat depressed toward the apex, punctured, scaly at the base, a median elevated line and stria each side from base to about the middle, apical half shining and remotely

punctured (♀): funicle 6-jointed, first joint elongate, second slender, longer than the third; joints 3-6 about equal, club darker. Eyes scarcely convex. Head convex, punctured, clothed with elongate scales, front sinuate. Prothorax wider than long, narrowed from the base, apex feebly constricted and slightly rounded on the sides; coarsely and rather densely punctured, each puncture concealed by a large, oval or rounded scale; a narrow median line, and a broad stripe each side of whitish scales. Elytra a little wider at the base than the prothorax, sides nearly parallel for one-half their length, thence very gradually narrowed to the apex; when viewed from above, a slight subhumeral tubercle on the ninth interspace is noticeable; striae deep, punctures large, not very close, and not concealed by the scales, which are predominantly brownish in color; scutellum and short scutellar line, base, interrupted line on the fourth interspace commencing about the middle, another on the sixth from base to middle, of grayish white scales. Legs moderately slender, femora infusate at middle, anterior moderately clavate and armed with a very small triangular tooth, middle and posterior more slender; tibiae moderately stout, nearly straight; tarsi not slender, apical half of last joint and claws blackish, latter armed with a long, slender tooth, which is closely approximate and parallel with its fellow. Long. 2 mm.; .08 inch.

*Hab.*—Burnett County, Texas.

A unique female specimen in Mr. Schwarz's collection. Very distinct; differs from the two preceding species, to which it is most closely related, in form, and in the claws being armed with a long, slender tooth, in this it agrees with *subvittatus*, which it also resembles in form and markings, but differs by its very small size and the second joint of funicle longer than the third.

#### Subgenus *Anthonomochæta*.

Beak long and rather slender, curved and slightly widened beyond the insertion of the antennæ, pubescent; scrobes straight, directed against the eye. Antennæ slender, inserted about two-fifths from the gular opening, funicle 7-jointed. Eyes small, round and feebly convex. The front is somewhat flattened, with a round fovea concealed by pubescence. Prothorax a little wider than long, strongly narrowed in front and slightly constricted at the apex, base bisinuate. Elytra broadly ovate, a little longer than wide, suddenly and fully one-third wider at the base than the prothorax; humeri callous, prominent; regularly rounded on the sides from base to tip; striae broad and deep, punctured; third and fourth ventral segments shorter than the others, fifth longer than the fourth in both sexes; pygidium exposed in the male, concealed in the female. Legs very slender, femora scarcely clavate and not toothed; tibiae very slender, straight, apical armature very feebly developed; tarsi slender, claws



armed with a long tooth, approximate to its fellow; surface densely clothed with long, coarse pubescence, intermixed with stiff, erect bristles.

Aside from the vestiture, so unusual in the present tribe of rhynchophorous coleoptera, the present subgenus differs from *Anthonomus* proper by its rather small eyes and the feeble, tibial armature. It is represented by a single species.

**A. heterogenus** n. sp.—Robust, ovate, ferruginous to piceous, antennæ and legs rufous; pubescence ashy gray, concealing the sculpture; the erect bristles are arranged in a single row on each elytral interspace and also along the outer margin of the tibiae, giving them a fimbriate appearance. Beak ferruginous, somewhat shining, punctured and indistinctly striate each side; first and second joints of funicle elongate, robust, latter longer than the third joint; outer joints wider; club dusky, long, elliptic, pubescent, and rather loosely articulate. Prothorax densely and finely punctured, underside punctured; abdomen less densely pubescent than the rest of the surface. Long. 2.2–2.7 mm.; .09–.11 inch.

*Hab.*—Arizona, Utah, Washington, Texas. Dr. Horn's and my own collection. Five specimens in all are before me.

Easily recognized by its coarse, hirsute appearance.

#### **ANTHONOMOPSIS** gen. nov.

I have established this genus on *Anth. mixtus* Lec., a pubescent species, with 6-jointed funicle and the claws armed with a short tooth. It differs from all others by the flattened abdomen, having the first and second segments conspicuously elongate and closely connate, the former being longer than the metasternum; segments 3–5 relatively short and about equal in length, the pygidium scarcely exposed at the tip in the male and entirely concealed in the female; all the tibiae are unguiculate at the apex.

It is represented by a single species.

**A. mixtus** Lec. Plate vii, fig. 26.—Subovate, reddish, or pitchy-brown, and rather densely clothed with coarse, variegated pubescence. Beak long, not slender; punctured and striate from base to near the apex. Antennæ stout, fuscous, first joint of funicle rather long and stout, second a little longer than the third, outer joints wider. Eyes convex. Head punctured and pubescent, frontal fovea deep. Prothorax wider than long, narrowed from the base, sides feebly rounded and constricted behind the apical margin; surface densely and coarsely punctured. Elytra feebly rounded on the sides and widened to behind the middle, rather rapidly narrowed to and conjointly rounded at the tip; about one-third, and rather suddenly, wider at the base than the prothorax; striæ and punctures coarser towards the base, latter closely approximate; interspaces wide, nearly flat, and almost smooth, with a few irregular punctures; humeral and a large discal spot behind the middle, rufous; a transverse fascia posteriorly on the dis-

cal spot and apex of dense, whitish pubescence; underside densely punctured and coarsely pubescent. Legs slender, ferruginous; thighs feebly clavate, infusate about the middle, all armed with a sharp tooth; tibiæ slender, nearly straight, all armed with a small hook at the apex; tarsi moderate, first and second joints slightly elongate, equal; third feebly bilobed, lobes small; claws divergent, armed with a small, acute tooth. Long. 2.5--3.2 mm.; .10--.13 inch.

*Hab.*—Pennsylvania, Texas, Iowa, Missouri.

The pubescence is easily rubbed off. Two specimens taken early in the Spring by Dr. Hamilton, and kindly sent me for examination, are entirely deprived of pubescence, probably due to hibernation, the occurrence of which must be rare among the members of the present tribe.

### **PSEUDANTHONOMUS** gen. nov.

Beak rather stout, moderately long and curved; scrobes oblique, directed beneath, rarely (*crategi*, *validus*) against the lower extremity of the eye. Antennæ not very slender, inserted two-fifths (♂) or one-half (♀) from the apex; scape incrassate at its distal extremity; funicle 6-, rarely (*relictus*) 5-jointed; fourth joint (third, *relictus*) shorter and smaller than either of the preceding or following joints (except *brunneus*, *parvulus*); club loosely articulate, pubescent. Eyes variable. Head subspherical, punctured. Prothorax wider than long, bisinuate at base, narrowed in front and constricted at the apex. Elytra transversely impressed behind the base; striæ and punctures coarse and deep; scutellum densely pubescent; prosternum short in front of the coxæ; mesosternum narrowed behind; metasternum moderately long; ventral segments nearly equal, fifth a little longer than the fourth in the female; pygidium exposed, middle coxæ narrowly, posterior not very widely separated. Legs slender, femora feebly clavate, all toothed; tibiæ slender, anterior and middle unguiculate, posterior mucronate at apex; tarsi slender, claws armed with a long and slender tooth.

The species are all of a rufo-testaceous or ferruginous color and pubescent, both on the upper and under surface, without any scales. In all, except *facetus*, the first and second, third and fourth, fifth and sixth elytral striæ become confluent at the base, the interspaces thus enclosed do not reach the basal margin, the third interspace becomes wider and more prominent at the anterior extremity (except *facetus*).

The species resemble each other very closely, are difficult to distinguish, and are, with the exception of *crategi* and *incipiens*, represented by a single, or but a few specimens.

They are to be distinguished as follows:

Funicle 6-jointed.

Second joint of funicle elongate, longer than the third, fourth joint smaller.

Scrobes scarcely oblique, impinging against the inferior extremity of the eye; elytra wider at the base than the prothorax.

Pubescence long, yellow and condensed in patches or bands on the upper surface; beak longer..... **cratægi.**

Pubescence short, whitish, equally distributed; beak shorter... **validus.**

Scrobes very oblique, directed beneath at a distance from the eyes; elytra scarcely wider at the base than the prothorax. Plate vii. fig. 27.

**incipiens.**

Second and third joints of funicle equal, or nearly so.

More robust; elytra suddenly wider at base, fourth joint of funicle small.

Alternate elytral interspaces narrow..... **seriesetosus.**

Interspaces equal, or nearly so.

Pubescence dense, coarse..... **tomentosulus.**

Pubescence fine, inconspicuous..... **facetus.**

Elongate species.

Fourth joint of funicle shorter than the others.

Larger; elytra scarcely wider at base than the prothorax, latter not strongly rounded on the sides..... **longulus.**

Smaller; elytra wider at base than the prothorax, latter strongly rounded on the sides..... **rufulus.**

Joints 4-6 of funicle equal.

Larger; eyes very convex; thorax very finely and densely punctured.

**brunneus.**

Smaller; eyes feebly convex; thoracic punctures small and more remote.

**parvulus.**

Funicle 5-jointed. Plate vii. fig. 28..... **relictus.**

**P. cratægi** Walsh.—Elongate-oval, ferruginous, with a rather dull lustre, and clothed with long, yellowish pubescence. Beak not very slender, punctured, and obscurely striate; scrobes scarcely oblique, impinging against the inferior margin of, and extending immediately below, the eyes, which are rather convex. Antennæ: scape directed beneath the rostrum during repose, rather suddenly incrassate at its distal end; first joint of funicle stout, elongate, second long and slender, longer than the third joint; fourth joint shorter than either of the others; club darker. Head somewhat conical, convex, punctured and finely rugose; occiput thinly, interocular space densely clothed, with long, yellow pubescence; transversely impressed above the eyes; frontal fovea elongate. Prothorax wider than long, sides broadly rounded, not strongly narrowed in front, broadly but feebly constricted at the apex; surface coarsely and rather closely punctured; pubescence condensed along the entire median line. Elytra wider at base than the prothorax; humeri rounded; sides slightly rounded, more strongly so towards the apex; striae wide, deeply impressed, more so towards the base; first and second, third and fourth, fifth and sixth striae confluent at the base; punctures large, deep, approximate; interspaces convex, rugose, third widened and somewhat protuberant at the base; pubescence condensed in small spots, patches or subtransverse lines; under surface punctured, pectus more densely, abdomen very sparsely and finely pubescent. Legs slender, thighs feebly clavate, armed with a broad, triangular tooth; tibiae slender, scarcely wider at

the apex, anterior and middle feebly bisinuate along the internal margin. Long. 2.5—2.8 mm.; .10—.11 inch.

*Hab.*—Canada, Pennsylvania, District of Columbia, Illinois, Wisconsin, Michigan.

***P. validus*** n. sp.—Oblong-oval, rufo-testaceous, a little more robust and more shining than the preceding, thinly clothed with fine, pale yellowish or whitish pubescence. Beak rather robust, moderately long, curved, somewhat shining, punctured and substriate, scarcely pubescent; scrobes more oblique than in the preceding, scarcely impinging against the lower margin of the eyes. Antennae not slender; first joint of funicle robust and rather short; second joint not slender, longer than the third; fourth joint very short. Eyes convex. Head punctured and pubescent, more so on the front and between the eyes; frontal fovea elongate, not sharply defined. Prothorax one-half wider than long, strongly narrowed anteriorly and broadly constricted at the apex, rounded on the sides; surface densely and deeply punctured; pubescence condensed along the median line from the base to about the middle. Elytra oval, nearly one-third, and rather suddenly wider at the base than the prothorax; humeri rounded; sides rather strongly rounded towards the tip; striae wide, impressed; punctures rather large, transverse and subconfluent; interspaces convex, shining, and somewhat rugose, alternate ones a trifle wider, especially noticeable toward the base; pubescence appears to be arranged in three irregular rows on each interspace, not condensed in patches or lines. Legs as in *erategi*, but the femoral tooth is subspiniform, longer; the tibiae very slender, longer, not widened towards the tip. Long. 2.2—2.7 mm.; .09—.11 inch.

*Hab.*—Nebraska, Colorado, Canada, New Mexico.

Four specimens are before me, one from each of the above localities. Coll. Dr. Horn and E. A. Schwarz; resembles *A. confusus*, but differs sufficiently in generic characters to require further reference.

***P. incipiens*** n. sp. Plate vii, fig. 27.—Elongate subovate, ferruginous; antennae and legs paler; clothed with yellowish gray pubescence. Beak stout, slightly widened from base to apex, coarsely punctured and pubescent at the base, median carina obsolete; scrobes very oblique and passing beneath at a distance from the eyes. Antennae rather stout; first joint of funicle robust, second long, slender, equal in length to the former and much longer than the third joint, which is oblong and a little longer than the fourth, which is very short; joints 5–6 a little longer, rounded; club darker, loosely articulate. Eyes convex. Head conical, punctured; front flattened, pubescent, fovea elongate. Prothorax a little wider than long, strongly narrowed in front and distinctly constricted at the apex; sides rounded; surface densely and deeply punctured, each puncture bearing a short yellowish hair. Elytra oblong, a little wider at the base than the prothorax; humeri rounded, sides almost straight, nearly parallel, very little wider behind, rapidly narrowed to and conjointly rounded at the tip; striae broad, impressed, deeper towards the base, straight; punctures large, closely approximate, a little smaller on the sides; interspaces moderately convex, more so towards the base, punctulate, rugulose; first and second, third and fourth, fifth and sixth striae confluent at the base, their corresponding interspaces not reaching the anterior margin; third interspace wider and more prominent at the base;

under surface punctured, thinly pubescent. Legs sparsely pubescent, thighs feebly clavate, armed with a sharp, triangular tooth, smaller on the hind pair; tibiae a little wider toward the apex, anterior and middle curved near the base and feebly biemarginate internally, posterior straight. Long. 2.5–2.8 mm.; .10–.11 inch.

*Hab.*—Pennsylvania, District of Columbia, Canada, New York, Michigan.

This species has heretofore been confounded in collections with *P. cratægi*, to which, indeed, it bears a close resemblance, but aside from the difference in the direction of the scrobes it differs by its darker color and shorter and evenly distributed pubescence, which is scarcely yellow.

***P. seriesetosus*** n. sp.—Oval, of the same color, and similarly pubescent as *validus*, from which it differs in the following characters: Beak stouter and shorter (♂), densely punctured and finely striate, second and third joints of funicle elongate, equal, third joint longer than the fifth or sixth, fourth very short. Head a little more elongate and somewhat constricted behind the strongly convex eyes; frontal sulcus long, deep and linear. Prothorax about one-third wider than long, median pubescent line narrow, entire, or nearly so. Elytra rounded on the sides and gradually narrowed from base to apex, the fourth, sixth and eighth interspaces are narrower in their whole extent than the adjacent ones; pectus more densely pubescent; tibiae stouter, a little shorter and wider towards the apex. Long. 2.3 mm.; .09 inch.

A unique male specimen from Detroit, Mich., in Mr. Schwarz's collection.

***P. tomentosulus*** n. sp.—Robust, subovate, ferruginous; antennae and legs paler, rather densely clothed with long, grayish white pubescence. Beak distinctly carinate and striate near the base. Antennae as in the last species, but a trifle more slender. Eyes feebly convex. Head wide, punctured and pubescent, transversely impressed behind the eyes, front not foveate. Prothorax a little wider than long, sides rounded, narrowed in front, not constricted at the apex; surface densely, coarsely and deeply punctured. Elytra wider at base than the prothorax, humeri rounded, transverse impression obsolete; sides moderately rounded from base to apex, coarsely striate and punctured on the disc, less so on the sides and declivity; punctures closely set; interspaces equal, slightly convex, irregularly punctured, rugulose; pubescence not arranged in rows, irregular and directed transversely; underside punctured and pubescent; femora armed with a small, acute tooth; tibiae moderately slender, anterior and middle widened toward the apex and feebly bisinuate along the inner margin. Long. 2.4 mm.; .10 inch.

*Hab.*—Texas.

A female specimen in Mr. Ulke's collection. Distinguished from *seriesetosus* by the equal elytral interspaces, feebly convex eyes and the front not foveate; from *facetus* by the dense, coarse pubescence, larger size, dull lustre and confluent elytral striae.

**P. facetus** n. sp.—Elongate subovate, rufo-testaceous, shining; very thinly clothed with fine, whitish pubescence. Beak robust, finely punctured, gradually widened from base to apex; scrobes very oblique. Antennae as in *tomentosulus*; insertion visible from above. Eyes convex. Head convex, punctulate and sparsely pubescent, with a row of hairs along the inner margin of the eyes, transversely impressed behind the eyes, frontal fovea small, rounded. Prothorax wider than long, strongly rounded on the sides and broadly constricted at the apex; surface coarsely, but not closely punctured. Elytra rather suddenly and about one-fourth wider at the base than the prothorax, humeri rounded, wider behind the middle, with the sides nearly straight, and gradually narrowed to and separately rounded at tip; striae curved, wide, deeply impressed, especially on the disc and towards the base, not confluent at their anterior extremity; punctures large, rounded and deep, especially on the disc; interspaces narrow and convex at the base, becoming wider and more flattened posteriorly, nearly smooth, each with two irregular rows of piliferous punctures, third interspace not widened at base. Legs and tarsi slender, femoral tooth small, triangular. Long. scarcely 2 mm.; .07 inch.

*Hab.*—Lincoln, Neb.

A single male specimen from the above locality in my collection. Easily recognized by its shining surface, very sparse pubescence, all the interspaces narrowed anteriorly and the striae not confluent at the base.

**P. longulus** n. sp.—Elongate, ferruginous, dull, sparsely clothed with yellowish pubescence. Beak stout, scarcely wider at the apex, densely punctured with a median elevated line and stria each side, extending from the base to about the middle; scrobes less oblique, directed immediately beneath the eyes. Antennae moderately stout, second and third joints of funicle subequal, fourth a little shorter than the fifth. Eyes convex. Head convex, punctured and pubescent, more densely between the eyes, transverse impression obscure; frontal fovea small, round. Prothorax wider than long, less strongly narrowed in front, broadly rounded on the sides, apex broadly and distinctly constricted; surface densely punctured, punctures moderately large, pubescence somewhat condensed on the sides and along the median line. Elytra elongate, a little wider at the base than the prothorax and separately rounded; sides nearly straight, subparallel for three-fifths their length, thence gradually narrowed to and somewhat compressed near the tip, which is dehiscent; striae straight, moderately wide and impressed, punctures rather large and approximate; interspaces convex, equal in width or nearly so, third a little wider and more prominent anteriorly, rugose, each biserially punctured, pubescence condensed in irregular spots, underside punctured; abdomen clothed with white pubescence. Legs slender, femoral tooth distinct on all; tibiae slender, nearly straight. Long. 2.5 mm.; .10 inch.

*Hab.*—District of Columbia, North Carolina.

Two males. Coll. Dr. Horn and E. A. Schwarz. Distinguished by its elongate form from the preceding species.

**P. rufulus** n. sp.—Smaller and narrower than the preceding, almost parallel; rufous, somewhat shining, thinly clothed with very fine, whitish pubescence. Beak robust, shining, sparsely punctured and pubescent, obscurely striate



from base to middle; scrobes directed immediately beneath the eyes. Antennæ as in the preceding. Eyes moderately convex. Head remotely punctulate and sparsely pubescent, obscurely impressed transversely; frontal fovea small. Prothorax nearly twice as wide at the middle as long, slightly narrowed in front and scarcely constricted at the apex; sides strongly rounded about the middle; surface punctured, punctures small and rather remote. Elytra about one-fourth wider at the base than the prothorax; humeri rounded; sides straight and nearly parallel for two-thirds their length, thence rounded to apex, transverse impression behind the base distinct; striæ slightly curved, wide and deeply impressed; punctures very large, round and wider than the interspaces on the disc, becoming smaller towards the circumference, narrowly separated or subconfluent; interspaces moderately convex, rugulose; underside rather densely punctured; side pieces of thorax more densely clothed with very fine, white pubescence; abdomen and legs nearly glabrous; femora slender, armed with a very small, acute tooth; tibiæ rather stout, widened from base to apex. Long. 2 mm.; .08 inch.

*Hab.*—District of Columbia.

Two specimens in the collection of Mr. E. A. Schwarz. A very distinct species and more nearly parallel than any other in this genus.

**P. brunneus** n. sp.—Similar in form and coloration to *longulus*, but larger, very thinly clothed with short, whitish pubescence. Beak a little longer than the prothorax, rather stout, finely punctato-striolate, slightly widened at the apex, median elevated line obsolete, not pubescent; scrobes directed immediately beneath the eyes, which are oval, convex, free at their inner and posterior margin. Antennæ moderately slender, first joint of funicle long, stout; second about half as long as the former and a little longer than the third, which is a little longer than the three following joints, which are equal or nearly so. Prothorax wider than long; sides regularly rounded, broadly and rather sharply constricted at the apex; base bisinuate; surface finely and densely punctured, with a short, smooth dorsal line at the base; pubescence not condensed, inconspicuous. Elytra one-fourth wider at the base than the prothorax, oblong; humeri rounded; sides feebly rounded; striæ broad and deep, scarcely curved, confluent at base, punctures moderately long, subconfluent; interspaces convex, rugulose; third widened and more prominent at base; underside punctured and thinly pubescent. Legs less slender than in *longulus*; femoral tooth acute, triangular. Long. 3 mm.; .12 inch.

*Hab.*—New Mexico.

One specimen (♂) in my collection.

**P. parvulus** n. sp.—Similar in form, but smaller than *brunneus*, more shining with the pubescence scarcely more obvious. Antennæ slender, joints 4-6 equal in length, outer ones a little wider; the beak is rather slender (♀), shining, punctured, especially towards the base. Eyes less convex, more rounded and not free along the inner margin. Head sparsely punctured and pubescent. Prothorax wider than long, moderately narrowed in front and strongly constricted at the apex; sides rounded; surface less finely punctured than in the preceding. Elytra oblong, nearly one-third wider at the base than the prothorax, and the humeri less rounded; a little wider behind and feebly rounded on the sides, coarsely striate and punctured, striæ slightly curved, confluent at base.

punctures large, rounded, subconfluent on the disc; interspaces convex, narrower at the base, rugulose; third as usual, more prominent anteriorly; femora and tibiae slender, former armed with a small, acute tooth. Long. 2.2 mm.; .09 inch.

*Hab.*—Illinois.

A single female specimen is before me. It is very closely related to *brunneus*, with which it agrees in the formation of the antennæ, but differs in size, the less convex eyes and the more coarsely punctured prothorax; the elytral punctures, also, are larger, and the interspaces more shining.

**P. relictus** n. sp. Plate vii, fig. 23.—Elongate, subovate, brown, clothed with coarse, yellowish gray pubescence. Beak moderately robust, widened from base to apex, punctured and feebly bistriate from base to middle; scrobes directed at a distance beneath the eyes. Antennæ moderately stout, funicle 5-jointed; first joint long, robust; second a little shorter, longer than the third, which is the shortest, fourth and fifth joints nearly equal, a little wider. Eyes scarcely convex, rather widely separated above. Head coarsely punctured, front flattened, fovea obsolete. Prothorax wider than long, narrowed in front, broadly but feebly constricted at the apex; sides well rounded behind the constriction; surface coarsely and closely punctured. Elytra elongate, wider behind, but little wider at the base than the prothorax; humeri rounded, coarsely striate and punctured, especially near the base; third interspace conspicuously widened at its basal extremity; interspaces nearly flat, except near the base, roughened and each with several irregular rows of punctures; underside finely and remotely punctured, and rather sparsely pubescent. Legs moderately slender, dark testaceous, femora infusate about the middle, feebly clavate, anterior thighs armed with a moderately large, subspiniiform tooth; tooth of middle and posterior thighs smaller; tibiae and tarsi slender. Long. 2 mm.; .08 inch.

*Hab.*—Pennsylvania.

A unique ♂ taken by me some years ago. The occurrence of 5-jointed funicle in the present genus is certainly remarkable. In general appearance the species resembles *incipiens*; the color is darker than in any other species.

#### NEOMASTIX gen. nov.

This new genus is established upon two small species from the Atlantic States, differing from *Anthonomus* in the 5-jointed funicle and the broadly ovate, antennal club.

Beak long, not very slender, punctured and striate; scrobes commencing near the middle and directed against the lower segment of the eyes. Antennæ slender, scape straight, moderately incrassate at its distal end; funicle 5-jointed, first joint long and robust, joints 2-5 nearly equal, outer joints a little wider, clava broadly oval, closely articulate, basal joint shining. Eyes moderately convex and slightly

free behind, somewhat approximate upon the front; frontal fovea obsolete. Prothorax wider than long, narrowed in front; apex broadly, but not strongly constricted; surface punctured; elytra wider at the base than the prothorax, rounded on the sides, strongly convex on the declivity, coarsely striate and punctured; first and second ventral segments moderately long; third to fifth short, equal; fifth broadly emarginate in the male; pygidium freely exposed and slightly inflexed in the male, but slightly visible in the female. Legs not very slender; thighs feebly clavate, not toothed; tibiæ nearly straight, anterior and middle unguiculate, posterior mucronate at apex; tarsi rather stout, first and second joints equal, not longer than wide; third joint broadly bilobed, fourth moderately long; claws armed with a sharp and rather long tooth.

Represented by two species:

Dark piceous, prothorax less coarsely and less densely punctured, without median elevated line..... **solidaginis**.  
 Reddish, prothorax more coarsely and more closely punctured with a median, elevated line..... **punctatulus**.

**N. solidaginis** n. sp. Plate vii, fig. 29.—Oval, moderately robust; piceous, clothed with whitish, suberect pubescence. Beak feebly striate, punctured and pubescent. Eyes moderately convex, posterior margin rather free. Head convex, remotely punctured and pubescent, with a feeble transverse impression above the eyes. Prothorax more than one half wider than long, narrowed in front, feebly but broadly constricted at the apex, biemarginate at the base; sides feebly rounded behind the middle; surface rather finely and not closely punctured. Elytra oval, wider than the prothorax at its base; humeri prominent, rounded; striæ moderately deep, punctures rather large and close set; interspaces convex, finely and remotely punctulate; underside rather coarsely punctured, with the pubescence a little longer than above. Long. 1.5 mm.: .06 inch.

*Hab.*—Pennsylvania (Hazleton), Massachusetts (Ulke), Virginia, Maryland (E. A. Schwarz).

I have taken my specimens late in the fall on the deflorescent flower heads of *Solidago* species. Some specimens are less darkly colored.

**N. punctatulus** n. sp.—Oval, robust, reddish brown, thinly clothed with whitish pubescence. Beak punctured, deeply striate, pubescent. Eyes moderately convex. Head pubescent, remotely punctured, front transversely impressed above the eyes. Prothorax nearly twice as wide as long, moderately narrowed in front, broadly and distinctly constricted behind the apical margin; surface coarsely and rather closely punctured, an elevated dorsal line extending from the base to about the middle, more or less distinct. Elytra oval, humeri rounded, prominent; striæ deep, wide, coarsely and closely punctured; interspaces convex, punctulate; underside punctured. Long. 1.6 mm.; .06 inch.

*Hab.*—Florida. Coll. E. A. Schwarz and H. Ulke.

A little larger and more robust than the preceding; prothorax more distinctly constricted behind the apical margin, and, like the elytra, more coarsely punctured. More material from intermediate points may prove this to be a mere variety of the former.

**CHELONYCHUS** gen. nov.

Beak as long as the head and prothorax, not very slender, striate; scrobes straight, commencing about the middle of the rostrum and attaining the eyes; funicle of antennæ 7-jointed; first joint elongate, not very stout; second joint a little longer than the third; joints 3-7 rounded, outer ones scarcely wider; club suboval, not closely articulate, pubescent; front foveate. Prothorax wider than long, narrowed in front, base feebly biemarginate. Elytra a little wider at the base than the prothorax, slightly wider behind the middle and strongly convex on the declivity; coarsely striate and punctured; mesosternum triangular between the coxæ, declivous in front, obtuse behind; metasternum short; ventral segments subequal, first and second connate, third and fourth equal, fifth as long as the fourth in the male; pygidium freely exposed in both sexes. Legs long and slender; femora moderately clavate, toothed; tibiæ slender, anterior and middle unguiculate, posterior mucronate at apex; tarsi slender, third joint deeply bilobed; claws long and slender, divaricate, and strongly flexed with a small, acute tooth at the base.

The type and only representative of this genus is a small, black species, clothed with whitish scales and intermixed with a fine, semi-erect pubescence, resembling, in this respect, *Anth. robustulus*, but less robust and readily distinguished by the long and flexed claws armed with a small basal tooth.

**C. longipes** n. sp. Plate vii, figs. 30, 30a, 30b.—Oblong-oval; the scaly vestiture not very dense. Beak finely striolate and striate each side; the eyes are feebly convex and not free behind. Head convex, punctured and pubescent. Prothorax coarsely and closely punctured, and broadly rounded on the sides. Elytra feebly rounded on the sides; punctures large, partially concealed by the scales and rather remotely placed; each elytral interspace with a row of white, suberect hairs; the femoral tooth is quite distinct on all. Long, 1.5-2 mm.; .06--.08 inch.

*Hab.*—Yreka, Cal. (Dr. Horn); Minnesota, Colorado (H. Ulke).

**NANOPS** gen. nov.

The type of this new genus is a small, narrow insect, resembling, in form and size, *A. (Cuemocyllus) nanus* Lec. Beak as long as the prothorax, robust, cylindrical, curved; scrobes commencing about

the middle and reaching the eyes. Antennæ robust, inserted about the middle of the rostrum; scape short, incrassate towards the distal end; funicle 6-jointed, first joint long and stout, the second a little longer than the third, club ovate, rather loosely articulate and pubescent. Eyes large, round and flattened, somewhat approximate upon the front, which is finely sulcate. Prothorax wider than long, scarcely narrower in front than at the base, rounded on the sides; base feebly bisinuate. Elytra scarcely wider at the base than the prothorax, elongate and a trifle wider behind the middle; striae impressed, punctures moderate and rather remote; mesosternum almost parallel between the coxæ; metasternum rather short, scarcely as long as the first ventral segment at middle; first and second segment connate, former a little longer than the latter, third and fourth gradually shorter, fifth as long as the fourth in the male; pygidium fully (♂), or partially (♀) exposed. Legs rather short and stout; femora moderately clavate, not toothed; tibiæ rather short, widened from base to apex, all unguiculate at the apex; tarsi moderately stout; first and second joints equal, not elongate; third joint broadly bilobed; claws armed with a short basal tooth.

The vestiture consists of fine pubescence; but one species is known to me.

**N. schwarzii** n. sp. Plate v, fig. 31.—I have but little to add to the above generic description. Elongate, subparallel; pitchy brown, sparsely clothed with rather long, white pubescence, which, on the elytral interspaces, arises from a single row of fine punctures; the beak is alutaceous, neither punctured nor striate. Head impunctured, alutaceous; the prothorax is moderately and not closely punctured. Elytra a little darker along the suture. Long. 1.4 mm.; .56 inch.

*Hab.*—Florida. Coll. E. A. Schwarz, H. Ulke and F. Bowditch.

It gives me pleasure to dedicate this species to my friend, Mr. E. A. Schwarz, of Washington, D. C.

### EPIMECHUS gen. nov.

Beak long, cylindrical and curved; scrobes commencing about the middle of the rostrum, directed against the lower segment of the eyes, which are more or less flattened. Antennæ rather slender; funicle 6- or 7-jointed, front with a linear impression. Prothorax wider than long, narrowed in front, base bisinuate. Elytra wider at the base than the prothorax, elongate, striate and punctured; underside as in *Anthonomus*. The pygidium is entirely uncovered

in the male (except *nevadicus*) and concealed in the female; the tibiae are strongly armed at the apex; claws simple, divaricate.

The genus differs from *Anthonomus* by the simple, divaricate claws. The species are elongate-oval in form and rather convex; they are easily distinguished as follows:

Funicle of antennae 7-jointed.

Pubescent, femora mutic.....**mimicus.**

Squamous species.

Thorax trivittate, hind tibiae curved.....**curvipes.**

Thorax univittate, hind tibiae straight.....**soriculus.**

Funicle of antennae 6-jointed.

Thinly clothed with squamiform pubescence.....**adspersus.**

Densely scaly.....**nevadicus.**

**E. mimicus** n. sp.—Elongate-oval, black, with dull lustre, very sparsely clothed with short whitish pubescence, which is a little coarser and longer on the thoracic side pieces. Beak about as long as the head and prothorax, moderately slender, curved and subdepressed towards the apex; finely punctured and striolate on the sides. Antennae dark piceous, moderately slender; scape rather short, strongly incrassate and curved at its distal extremity; funicle 7-jointed, first joint moderately elongate and not very stout, second joint slender, longer than the third; joints 3-7 rounded, gradually wider; clava thinly pubescent and rather loosely articulate. Eyes large, flattened, somewhat approximate upon the front with the posterior margin rather free. Head convex, finely alutaceous, with a few remote, superficial punctures; frontal fovea large and well impressed. Prothorax wider than long, strongly narrowed in front, base bisinuate; sides rounded from the base, apex feebly constricted; surface coarsely, but not closely punctured. Elytra oblong, fully one-third and rather suddenly wider at the base than the prothorax; sides nearly parallel for more than one-half their length, thence gradually rounded to the apex; striae wide, impressed; punctures moderately large and rather closely approximate; interspaces slightly convex, rugulose, each with a row of fine, remote punctures, bearing a fine, short hair; underside punctured; ventral segments short, first and second separately less than one-half longer than either of the three following, which are short and about equal in length (♂); pygidium fully exposed, convex, punctured. Legs rather slender, thighs feebly clavate not toothed; tibiae slender, nearly straight and parallel, with the armature well marked; tarsi slender, third joint feebly bilobed; claws slender, divaricate and simple. Long. 2.8 mm.; .11 inch.

*Hab.*—California.

A unique male specimen in Mr. Ulke's collection is before me. It is labeled "*A. morulus* Lec.," to which, indeed, it has the greatest resemblance, and from which it can only be distinguished by the simple claws. From *E. adspersus*, which it also resembles in form and general appearance, it is distinguished by its larger size, finer pubescence and 7-jointed funicle.



**E. curvipes** n. sp. Plate v, fig. 32.—Elongate-oval, black, not densely, clothed with rather large white scales. Beak moderately long and slender, regularly curved, shining, punctured with an indistinct stria each side. Antennæ slender, dark piceous; scape straight, only moderately thickened at the apex; funicle 7-jointed, first joint as long as the three following united, second scarcely longer than the third; three outer joints a little longer and wider; clava not closely articulate. Eyes as in the preceding. Head moderately convex and rather densely clothed with scales; front sulcate. Prothorax wider than long, narrowed in front, broadly rounded on the sides and scarcely constricted at the apex; base very feebly biemarginate; surface densely and coarsely punctured; scales large, more condensed on the sides and along the median line. Elytra about one-fourth wider at the base than the prothorax; humeri rounded, scarcely wider behind; striae impressed, punctures moderately large and rather closely set; interspaces moderately convex; scales somewhat condensed on the fourth and sixth interspaces, an ill-defined, subdenuded patch each side behind the middle; underside punctured; thorax rather densely scaly, abdomen clothed with coarse pubescence; ventral segments similar to *mimicus*, but the fifth ventral segment is nearly twice as long as the fourth and the pygidium only partially uncovered in the male. Legs rather slender, squamous; femora feebly clavate, all armed with an acute tooth, which becomes almost obsolete on the hind pair; tibiæ slender, anterior and middle feebly curved, slightly biemarginate internally and strongly unguiculate at apex, posterior strongly curved in both sexes, apical mucro long and slender; tarsi as in *mimicus*, Long. 2 mm.: .08 inch.

*Hab.*—Nevada, New Mexico.

Four specimens; coll. Dr. Horn, E. A. Schwarz and H. Ulke. Distinguished by its simple claws and strongly curved posterior tibiæ; the latter character might give rise to its being referred to the subgenus *Chenocyllus*; examination of the claws, however, will prevent such a mistake.

**E. soriculus** n. sp.—Closely allied to the preceding, with which it agrees in form and coloration of integument, but is a little larger. It differs as follows: With the exception of the head, vittæ and scutellum, the upper surface is thinly clothed with small, semi-transparent scales, under side densely scaly. Beak longer than head and prothorax, slender, finely carinate, carina extending from the frontal fovea to about the middle of the beak; first joint of funicle less elongate, shorter than the three following joints. Prothorax with a narrow, entire median vitta of large white scales; sides underneath densely clothed with large white scales, which, however, do not extend upon the upper surface. Elytra rather finely striate and punctured; scutellum white, a basal vitta on the sixth and a short one about the middle of the fourth interspace of large white scales; the tibiæ are a trifle more slender, anterior and middle nearly straight, scarcely emarginate internally, with the apical hook less prominent; the posterior tibiæ are straight, and the apical mucro is small. Long. 2.5 mm.; .10 inch.

*Hab.*—Los Angeles, Cal.

A unique ♀ of this very distinct and pretty species in the collec-

tion of Mr. E. A. Schwarz. The sharply defined, narrow, thoracic and elytral vittæ, give this insect a rather striking appearance.

**E. adpersus** n. sp.—Elongate-oval, dull black, thinly clothed with small, grayish white scales, intermixed with a fine, short pubescence. Beak long and moderately slender, curved and punctured; median carina and a stria each side extending from the base to about the middle; scrobes deep. Antennæ slender, rufo-piceous; scape thickened at the apex; funicle 6-jointed, first joint moderately stout, nearly as long as the three following joints together; second joint longer than the third; joints 3-6 short, transverse; club rather loosely articulate. Eyes almost flat. Head convex, remotely punctured and thinly clothed with scales, front with a long, linear impression. Prothorax wider than long, narrowed in front; sides rounded from base to apex, latter scarcely constricted; surface densely and coarsely punctured, each puncture bearing a short, scale-like hair; a few larger scales on the sides and along the median line. Elytra one-fourth and rather suddenly wider at the base than the prothorax; sides scarcely rounded and gradually narrowed to apex, coarsely striate and punctured, punctures closely approximate; interspaces feebly convex, rugose, each with several rows of fine punctures, which bear a very short, whitish hair; underside finely punctured, a little more densely clothed with scales; fifth ventral segment longer than the fourth in both sexes. Legs not very slender, thighs feebly clavate, mutic; tibiæ moderately stout, straight, feebly bisinuate internally, armature prominent; tarsi moderately slender, claws simple. Long. 2 mm.; .08 inch.

*Hab.*—California.

A male and female specimen in Mr. Ulke's collection.

**E. nevadicus** n. sp.—Elongate-oval, piceous, antennæ and legs reddish, densely clothed with large, oval, yellowish gray or brownish scales. Beak about as long as the head and thorax, moderately slender, curved and slightly wider towards the apex, scaly at the base; striate and rather coarsely punctured (♂), or very finely punctured with the striae obsolete (♀); scrobes commencing two-fifths (♂), or one-half (♀) from the apex. Antennæ moderately slender, scape slender, strongly incrassate at apex; funicle 6-jointed, first joint stout and but little longer than the second, which is slender and longer than the third; joints 3-6 equal, and rather closely articulate. Eyes nearly flat, not free posteriorly. Head densely scaly, front with an impressed line. Prothorax wider than long, base bisinuate, narrowed in front; sides broadly rounded from base to apex, latter not constricted, but feebly and transversely impressed behind the anterior margin; surface densely punctured, punctures concealed by the scaly covering, a broad, ill-defined, darker stripe each side of the median line. Elytra elongate, one-fourth wider at the base than the prothorax; humeri rounded; sides feebly rounded and gradually narrowed to the apex, which almost completely conceals the pygidium; striae and punctures nearly concealed by the scales; interspaces, with the scales intact, flattened; first interspace gradually widened from base to apex, where it projects somewhat, giving it, when viewed from above, a sub-acuminate appearance; toward the outer margin and a stripe each side of the suture not including the first interspace, darker; underside densely scaly; ventral segments subequal, third and fourth but little shorter than the others; pygidium very little exposed in the male; entirely concealed in the female. Legs

moderately stout, thighs clavate, anterior armed with a small tooth, middle scarcely toothed; tibiae rather short, robust, anterior and middle slightly curved and biemarginate internally, posterior straight, apical armature moderate; tarsi long and slender, first and second joints elongate, third bilobed, with the lobes narrow, fourth long; claws feebly divergent not toothed. Long. 2.5–2.7 mm.; .10–.11 inch.

*Hab.*—Arizona, Nevada (Morrison).

Five specimens in Dr. Horn's collection.

The simple claws, 6-jointed funicle and dense scaly vestiture, readily distinguish this species, which, however, differs in several points from the other members of this genus; the claws, though simple, are less slender and less divergent, the lobes of the third tarsal joint strikingly narrow, a character I have not observed in any other Anthonomid; the almost concealed pygidium, and lastly the dense, imbricate, scaly vestiture, present a group which might be considered to possess more than specific value. I prefer, however, to leave it in the present genus, rather than to establish a new one on what appears to me insufficient characters.

#### **EPHELOPS** gen. nov.

Beak shorter than the head and prothorax and rather robust, feebly curved, punctured; scrobes commencing about the middle of the rostrum and extending immediately beneath the eyes. Antennae stout, scape short, strongly incrassate at its distal extremity; funicle 7-jointed, first joint very stout, second longer than the third, outer joints wider and shorter; club loosely articulate. Eyes convex, posterior margin free. Head convex; frontal puncture small. Prothorax wider than long, narrowed in front, feebly constricted at the apex; base emarginate each side. Elytra wider at the base than the prothorax; striae and punctures coarse; ventral segments decreasing in length, fifth shorter than the fourth in the male; pygidium exposed in both sexes. Legs robust; femora clavate; tibiae stout, widened to apex, anterior and middle unguiculate, posterior mucronate at apex; tarsi short and robust, first joint scarcely longer than wide, second wider than long, third broadly bilobed, fourth about as long as the first and second together; claws short, robust, not toothed.

The type and only representative of this genus is a small, thinly pubescent insect, greatly resembling *Anth. corvulus* Lec., but still smaller.

**E. triguttatus** n. sp. Plate vii, fig. 33.—Robust, subovate, black, with some lustre. Beak towards the apex, antennae and legs rufous; almost glabrous, pu-

bescence white, sparse and very short. Prothorax coarsely, but not densely punctured. Elytral punctures closely approximate; interspaces feebly convex, rugulose; scutellum and a small spot about the middle of the fourth interspace, densely clothed with white, squamiform pubescence; anterior thighs armed with a rather large tooth; the tibiae are feebly biemarginate internally. Long, 1—5 mm.; .06 inch.

*Hab.*—Key West, Fla. Coll. E. A. Schwarz.

The general habitus and ventral formation recalls here the *signatus* group of *Anthonomus*. The white scutellum and spot on the fourth interspace give the insect a very characteristic appearance.

#### **ALYCODES** gen. nov.

Beak longer than the prothorax and not very slender, cylindrical, curved and deeply striate; scrobes linear, impinging against the middle of the eyes. Antennæ slender, inserted about one-third from the apex; scape long, thickened at the apex; funicle 7-jointed, first joint moderately long and rather slender, second joint longer than the third; following joints rounded, outer ones scarcely wider; club oval, first joint shining. Eyes large, rounded and almost flat. Head spherical, punctured; frontal fovea almost obsolete. Prothorax transverse, but little narrower at the apex than at base, latter truncate; sides rounded, rather suddenly narrowed in front and constricted at the apex. Elytra elongate, much wider at the base than the prothorax; sides parallel, gradually rounded to the tip, which is slightly debiscent, and completely conceals the pygidium; striate and punctured. Prosternum not very short and somewhat declivous in front of the coxæ; mesosternum not wide between the coxæ and produced in front in the form of a short, obtuse spine; metasternum as long as the first ventral segment at middle; ventral segments unequal, third and fourth short, united about as long as the second; fifth long, rounded; first two segments connate, the suture curved at middle, the other sutures straight; pygidium not visible from below. Legs rather long and slender; thighs feebly clavate, armed with a prominent, broad, triangular tooth; tibiae slender, very feebly biemarginate internally; articulating surface oblique, all unguiculate at apex, hook rather small; tarsi slender, claws simple, slender and widely divergent, obtuse at apex.

The type and only species, is a remarkable insect, agreeing in form and shape with narrow forms of *Elleschus ephippiatus*. It is sparsely clothed with a very fine, almost imperceptible pubescence. The position of this genus in the present tribe is somewhat doubtful.

The simple claws, covered pygidium and short third and fourth ventral segments, may be considered valid reasons for placing it near *Erirrhinus*. The formation of the antennæ and the general habitus are distinctly Anthonomid. It forms a transition from the present tribe to the *Erirrhiniini*.

**A. dubius** n. sp. Plate vii, figs. 34—34a.—Elongate-oval, pitchy-black and almost imperceptibly pubescent; the beak is striate and punctured, the striæ extending from the base to about the middle. Head finely punctured. Prothorax finely punctured, more densely on the sides with an ill-defined, smooth, dorsal line; the elytral striæ are fine, punctures moderately large and rather close set; interspaces nearly flat, irregularly punctulate; underside punctured, distal end of tibiæ and the tarsi, rufo-piceous. Long. 3.2 mm.; .13 inch.

*Hab.*—Canada.

A unique ♂ specimen in the collection of Dr. Hamilton, who has kindly placed it in my cabinet.

#### **ELLESCHUS** Stephens.

Beak rather short and robust, cylindrical, and nearly straight; subcarinate. Scrobes oblique, wide and deep, impinging against the lower segment of the eyes. Antennæ moderate, scape short, incrassate at apex; funicle 7-jointed, first joint stout, outer joints wider; club oval, pubescent, first joint longer than usual. Eyes large, transversely oval, moderately convex. Head punctured, densely pubescent between the eyes. Prothorax wider than long, narrowed in front, rounded on the sides; base nearly straight; surface punctured. Elytra elongate, wider at base than the prothorax, slightly dehiscant at the apex and concealing the pygidium; striæ and punctures moderate; middle coxæ narrowly separated by the mesosternum; metasternum as long as the first ventral segment; ventral segments unequal, third and fourth short, united about as long as the second segment, fifth long, rounded; sutures, except the first, bent slightly backward at the sides. Legs moderately long and somewhat stout; thighs clavate; tibiæ not slender, middle and posterior widened towards the apex, all unguiculate; tarsi rather stout, third joint broadly bilobed; claws appendiculate. The fifth ventral segment of male is carinate near the tip.

LaCordaire placed this genus among his *Tychiides*, on the ground that the 2-4 ventral sutures are slightly bent backward at the sides. Its nearest ally in the present tribe is *Alycodes*.

In addition to the two species heretofore known in our fauna I

have to record the occurrence of the European *E. Scanicus*, and the addition of a new species. They may be separated as follows:

Femora not toothed; elytra with denuded fascia or spot.

Denuded spot on each elytron.

Pitchy-black, second joint of funicle longer than the third; tarsi more slender, appendiculum moderate, each elytron with a denuded spot.

**bipunctatus.**

Ferruginous, second joint of funicle equal to third; tarsi very stout, appendiculum large; elytra fasciate and vittate.....**Scanicus.**

A common denuded fascia; pubescence mottled .....**ephippiatus.**

Femora toothed; elytra without denuded fascia or spot .....**angustatus.**

**E. bipunctatus** Linn. Plate vii, fig. 35*b*.—Elongate-oval, pitchy-black, antennæ and legs ferruginous, densely clothed with coarse, appressed, grayish pubescence. Beak shining, second joint of funicle longer than the third. Prothorax about one-half wider than long, strongly narrowed in front and feebly constricted at apex; sides nearly straight behind, base scarcely emarginate each side; a smooth, median elevated line, abbreviated in front and behind; surface closely punctured, pubescence diverging from the median line. Elytra about one-fourth wider than long, humeri rounded; sides nearly parallel for three-fifths their length, thence gradually rounded to the tip; striæ fine, impressed, punctures moderately large and closely placed; interspaces feebly convex, somewhat roughened and punctured; an irregular, partly denuded spot behind the middle, extending from the second to the fourth interspace and thinly covered with fine, blackish pubescence. Legs moderate, femora clavate, mutic; tibiæ and tarsi only moderately stout, first and second tarsal joints a little wider than long, clawal joint projecting beyond the third; claws armed beneath with a moderately large tooth or appendiculum. Long. 3 mm.; .12 inch.

*Hab.*—Canada.

Introduced from Europe. The black spot varies in shape and extent, but never invades the first interspace. In some specimens a less pronounced darker space near the base.

**E. Scanicus** Payk. Plate vii, figs. 35, 35*a*.—More robust than *bipunctatus*; ferruginous, clothed with grayish white or brownish pubescence. Beak stout, punctured, shining, pubescent at base; second and third joints of funicle equal. Eyes as in the preceding. Head punctured, thinly pubescent, except between the eyes. Prothorax strongly rounded on the sides, rather suddenly narrowed in front and narrowly constricted at the apex; base scarcely emarginate each side; surface finely and not densely punctured, dorsal elevated line almost entire. Elytra oval, about one-third wider at the base than the prothorax; striæ moderately fine; punctures moderate, approximate; interspaces nearly flat; an irregular, oblique fascia about the middle, extending from the second interspace to the sides of the elytra; third, fourth and sixth interspaces for a short distance near the base and a subapical spot, almost denude of pubescence and only thinly covered with fine, brownish pubescence. Legs moderately robust; femora clavate, mutic; tibiæ rather stout and but slightly widened towards the tip; tarsi very robust, first and second joints much wider than long, fourth joint stout and



rather short, projecting but little beyond the lobes of the third joint; claws slender, with a very large, broadly triangular appendiculum at its base. Long. 2.7—3.3 mm.; .21—.13 inch.

*Hab.*—Pennsylvania.

One male and two female specimens. Coll. Dr. Horn and mine. I captured my specimen (♂) some years ago on oak, and has served as the type of the above description. One of Dr. Horn's specimens agrees in all particulars (except sexual differences) with mine, while the other has the denuded fascia of less extent and the interspaces not denuded near the base.

I have made careful comparison with well authenticated specimens of this species from Europe, and can discover no difference, except that a small denuded spot each side of the thorax is wanting in our specimens, but as this also occurs in one of my European specimens, it is probably of but subordinate value.

**E. ephippiatus** Say. Plate vii, figs 35c, 35d.—Elongate, ferruginous, mottled with pale yellowish and fawn-colored pubescence. Beak punctured. Prothorax rather finely and not densely punctured. Elytral striae with large, closely placed punctures; a large scutellar spot and another somewhat rhomboidal space behind the middle connected along the suture, of darker color. A transverse fascia of grayish pubescence immediately behind the posterior dark space; underside punctured; the claws are slender and armed beneath with a large rectangular tooth at the base. Long. 2—3.3 mm.; .08—.13 inch.

*Hab.*—Atlantic States; Michigan, Georgia, Kansas, New Mexico, Oregon, California.

A very variable species. The dark elytral spaces are almost obsolete in some specimens.

Mr. Thos. Casey very kindly has sent me a typical specimen of his *E. californicus*. It is entirely pitchy-black, resembling in this respect rather *bipunctatus*; legs a trifle paler. The beak is less punctured, shining, and the second joint of the funicle is longer than the third. In all other respects it agrees with *ephippiatus*, from which it does not appear specifically distinct, but forms a marked variety.

**E. angustatus** n. sp. Plate vii, fig. 35d.—Elongate elliptic, ferruginous, not very densely clothed with whitish, squamiform pubescence. Beak rather slender and moderately long, punctured and somewhat shining; substrate and rather densely scaly from base to about the middle. Antennae slender; first joint of funicle long and slender, second a little longer than the third, outer joints but little wider. Eyes as usual. Head punctured, occiput sparsely pubescent, densely squamous between the eyes. Prothorax wider than long, broadly rounded on the sides and very little wider at base than at the apex.

which is not constricted, smooth dorsal line short, just in front of the middle; punctures rather small and close set. Elytra elongate, about one-fourth wider at the base than the prothorax; sides nearly straight for three-fifths their length, thence gradually narrowed to apex, which is subacuminate; striæ moderately impressed, punctures small, closely approximate; interspaces nearly flat; pubescence nearly equally distributed; underside finely punctured and pubescent. Legs rather slender, thighs feebly clavate, anterior armed with a small acute tooth, which is represented on the middle and hind pair by an acute angle, less marked on the hind femur; tarsi less robust, fourth joint extending considerably beyond the third; claws armed beneath with a short obtuse tooth. Long. 2.8-3 mm.; .11--.12 inch.

*Hab.*—Arizona, Kentucky.

Two specimens, male and female, in Dr. Horn's collection. A very distinct species and unmistakable members of the present genus. The rather slender beak and toothed femora are anomalous.

### ORCHESTES III.

The eyes closely approximate above and the saltatorial posterior femora make the recognition of the species of this genus an easy matter. The beak, variable in length and thickness, lies between the anterior legs during repose; the scrobes commencing about the middle or even near the base; scape of antennæ not long; funicle 6- or 7-jointed. The prothorax is relatively small. The elytra oval or elongate-oval, wider than the prothorax, with the humeri rounded.

In reviewing the species I shall give only sufficient descriptive matter which, in connection with the synoptic table, will enable the student to identify his material. To the species heretofore known I have to add one new species.

They may be tabulated as follows:

Funicle of antennæ 7-jointed.

Elytra with patterns of pale pubescence.

An anterior and posterior transverse band, always conspicuous.

Anterior fascia wide, legs partly rufous.....**ephippiatus.**

Anterior fascia narrower; legs entirely black.....**salicis.**

A faint subbasal, transverse band only.....**niger.**

Elytra unicolorous, black.

Hind angles of prothorax rounded or rectangular, elytra without lateral spine.....**parvicollis.**

Hind angles of prothorax acute; elytra with a subhumeral spine.

**armatus.**

Funicle 6-jointed.

Hind femora strongly thickened.

Pubescence long and coarse, brownish.....**puberulus.**

Pubescence fine, sparse and whitish.

Black, thoracic punctures large, irregular; elytral interspaces coarsely rugose.....**canus.**

Black, thoracic punctures moderate, round; elytral interspaces almost smooth, shining ..... **pallicornis.**

Black, elytra and abdomen red ..... **betuleti.**

Hind femora scarcely thickened.

Legs rufous ..... **rufipes.**

Legs piceous.....Var. **minutus.**

**O. ephippiatus** Say.—Robust, oval, piceous; beak, antennæ and legs rufous. Prothorax small, rufo-piceous, not densely clothed with whitish pubescence. Elytra oval, much wider than the prothorax; anterior two-fifths and a transverse post-median fascia rufous, or rufo-piceous and densely clothed with white pubescence and connected by a line on the second interspace; femora, especially the posterior, wholly or in part piceous. Long. 2.5–3 mm.; .10–.12 inch.

*Hab.*—Pennsylvania, Iowa, Illinois, California, Wisconsin.

Allied to *O. rufitarsis* Germ. of Europe.

**O. salicis** Linn.—Similar to the preceding, but smaller and less robust. Black, antennæ and tarsi rufous; anterior elytral fascia narrower than in *ephippiatus*, about one-third from the base, irregular, prolonged along the sutural interspace to the scutellum in front and extended along the second interspace posteriorly, but not connected with the posterior transverse band which is narrow and angulated. Long. 2.5 mm.; .10 inch.

*Hab.*—California, Wisconsin.

This is *O. subhirtus* Horn. Careful comparison of Dr. Horn's types with specimens of the European species in my cabinet leave no doubt of their identity.

**O. niger** Horn.—Rather robust, subovate; black, antennæ piceous, clothed with short pubescence, which is black on the upper and whitish on the under surface; scutellum densely white pubescent; an inconspicuous, transverse fascia about one-third from the base and consisting of sparse white pubescence. Long. 2.8 mm.; .11 inch.

*Hab.*—Illinois, Michigan, Pennsylvania.

The white scutellum is in striking contrast with the rest of the surface.

**O. parvicollis** Lec.—Entirely black, oblong-oval with scarcely any lustre. Prothorax coarsely and rather densely punctured; hind angles subrectangular, somewhat rounded. Elytral interspaces very rough. Long. 2.8–3 mm.; .11–.12 inch.

*Hab.*—California, Nevada, Colorado.

Distinguished from the three preceding species by the absence of elytral markings and from the following by its coarse sculpture, rounded posterior angles of thorax and the ninth elytral interspace not produced in a spine.

***O. armatus*** n. sp. Plate vii, fig. 36.—Subovate, robust, very convex, black and shining; very sparsely clothed with short, pale, suberect pubescence. Beak cylindrical, shining, substriate and rather coarsely punctured, especially near the tip. Antennæ entirely pale testaceous, very slender; scape short, funicle 7-jointed, first joint long, second and third elongate, subequal, joints 4-7 shorter, rounded; clava elongate. Prothorax wider than long, and nearly twice as wide at base than at apex, sides oblique, nearly straight, feebly constricted at tip, hind angles acute, punctures moderately large and rather remote, each bearing a short whitish hair. Elytra broadly oval, very convex, not much wider at base than the prothorax; humeri prominent, callous and rounded; striæ rather fine, punctures small and not closely approximate; interspaces slightly convex, smooth and shining, each with a row of fine, remote punctures bearing a short, hair; the ninth interspace near the base is produced in the form of a short, acute spine directed forward; under surface a little more densely and coarsely pubescent; hind femora scarcely incrassate; tarsi pale rufous. Long. 2.3 mm.; .09 inch.

*Hab.*—Allegheny, Pa. A single female specimen. Collected and kindly given me by Dr. Hamilton.

Very different from any other *Orchestes* known to me and remarkable for its very convex form, shining surface, acute posterior thoracic angle, and the acute spine of the ninth interspace.

***O. puberulus*** Boh.—Elongate oval, black, antennæ and legs testaceous, densely clothed with long, coarse, gray or yellowish gray pubescence; funicle 6-jointed; scutellum clothed with white pubescence. Elytra regularly oval, humeri rounded, not at all prominent. Long. 3.2-4 mm.; .12-.16 inch.

*Hab.*—California.

Easily known by its coarse, yellowish pubescence.

***O. canus*** Horn.—Similar in form to the preceding species, but the humeri are more prominent. Black, antennæ rufo-piceous; pubescence short, sparse, whitish. Prothorax punctured, punctures rather crowded and irregular. Elytral interspaces rugulose, roughened with some lustre. Long. 2.8-3.2 mm.; .11-.13 inch.

*Hab.*—Michigan, Colorado.

Resembles *O. stigma* Germ. of Europe, but the pubescence is white or yellowish, and the elytral striæ are less deeply impressed.

***O. pallicornis*** Say.—Similar to *canus*, but a trifle smaller, with the humeri still more prominent. Black, antennæ and tarsi reddish. Prothorax less densely punctured, punctures less irregular; the elytral interspaces are nearly smooth and more shining. Long 3 mm.; .12 inch.

*Hab.*—Atlantic States to Texas, Michigan.

***O. betuleti*** Horn.—Somewhat elongate-oval; black, elytra and abdomen bright red; pubescence sparse, almost imperceptible. Prothorax coarsely and remotely punctured. Long. 2.8 mm.; .11 inch.

*Hab.*—Maryland, District of Columbia.

Easily recognized by its striking coloration.

**O. rufipes** Lec.—Elliptic, smaller and less robust than any of the preceding species. Black, thinly pubescent; antennæ and legs rufous; hind femora feebly incrassate, more or less piceous. Long. 2 mm.; .08 inch.

Closely allied to the European *O. foliorum* Müller, from which it appears to differ by the prothorax being a little more transverse and not rounded in front.

*O. minutus* Horn is a variety of the above with the legs entirely piceous. It occurs in California and Colorado.

### **XANTHUS** gen. nov.

I have established this new genus upon two very small, testaceous and thinly pubescent species having the claws simple, divergent, and the tibiæ almost truncate at the tip, with the armature very small. Beak long, rather slender and nearly straight, a little widened towards the tip, not striate; scrobes straight, attaining the eyes, which are convex. Antennæ moderately stout, inserted two-fifths (♂) or one-half (♀) from the apex; scape slender, impinging against the eye; funicle 7-jointed, first joint stout, second and third nearly equal, outer joints transversely rounded; club rather loosely articulate; front sulcate. Prothorax wider than long, feebly narrowed in front and slightly constricted behind the anterior margin. Elytra a little wider at the base than the prothorax, striate and punctured; mesosternum moderately wide between the coxæ, declivous in front; first and second ventral segments moderately long, third and fourth shorter, equal; fifth not longer than the fourth in the male; pygidium freely exposed in both sexes. Legs moderately slender, thighs feebly clavate; tibiæ straight, slightly widened towards the tip; anterior and middle with a very small, scarcely perceptible hook, posterior feebly mucronate at apex; tarsi with the third joint broadly bilobed; claws simple.

The two species are amongst the smallest in the tribe and are distinguished as follows:

Larger, rufo-testaceous; prothorax more densely punctured, pubescence conspicuous. .... **pygmaeus**.  
Smaller, pale testaceous; prothorax remotely punctured, pubescence very fine.

### **Jilipitanus**.

**X. pygmaeus** n. sp. Plate vii, figs. 37, 37*a*.—Elongate-subovate, rufo-testaceous, pubescence white and rather long, especially on the prothorax. Beak shining, finely punctured. Head sparsely punctured and pubescent, frontal sulcus long. Prothorax moderately wider than long, feebly rounded on the sides in front; surface coarsely and densely punctured, each puncture bearing a long hair. Elytra a little wider behind the middle; sides nearly straight for

three-fifths their length, thence rounded to the tip; striae scarcely impressed. punctures elongate, moderately large and not very close; interspaces feebly convex, rugulose and irregularly punctured; underside with a few punctures; abdomen very sparsely. pectus more densely pubescent, anterior thighs armed with a very small tooth. Long. 1.5—1.8 mm.; .06—.07 inch.

*Hab.*—Anglesea, N. J. (Dr. Horn); Piney Point, Md. (E. A. Schwarz and H. Ulke.)

**X. liliputanns** n. sp.—Smaller, elongate-oblong, subdepressed, pale testaceous and very sparsely clothed with fine, whitish pubescence, otherwise very similar to *pygmæus*; the beak is very sparsely punctured, shining. Antennæ, eyes and head as in the preceding. Prothorax wider than long, punctures smaller and less dense. Elytra elongate, sides feebly rounded from humerus to apex; striae fine, punctures small; interspaces rugulose; underside and legs as in *pygmæus*; tooth of anterior thighs very small, broadly triangular. Long. 1.5 mm.; .06 inch.

*Hab.*—District of Columbia.

Two specimens in Mr. Ulke's collection. A little more slender than the preceding; the hook of the anterior and middle tibiae is scarcely perceptible.

#### **ACALYPTUS** Sch.

Beak moderately slender, cylindrical, curved; scrobes commencing near the middle of the beak, straight, and directed against the middle of the eyes. Antennæ slender; scape incrassate towards its distal end, funicle 7-jointed, equally pubescent, without verticels of stiff hairs; first joint long and robust, joints 2–7 gradually wider, closely articulate, and scarcely longer than the clava, which is ovoidal acuminate, pubescent and annulate; first joint long, occupying nearly one-half the length, following joints short. Head broadly conical. Eyes feebly convex. Prothorax wider than long, narrowed in front and constricted at the apex; base obliquely truncate each side. Elytra wider at base than the prothorax, oval, sides feebly rounded, indistinctly striate and punctured, rather suddenly narrowed and separately rounded at the apex, leaving the pygidium freely exposed; anterior coxæ narrowly separated by the prosternum, which is long in front of the coxæ; middle coxæ separated by the mesosternum, which is declivous in front; metasternum moderately long; first and second ventral segments of equal length behind the coxæ, third and fourth segments short, united as long as the second, fifth scarcely longer than the fourth in the male; longer and broadly rounded in the female. Legs rather slender, thighs clavate, mutic; tibiae slender, scarcely widened to apex, anterior and middle not unguiculate, pos-



terior with a very short mucro at apex; tarsi moderately long, first and second joints about as wide as long, third deeply, but not broadly bilobed, fourth joint slender, moderately long; claws slender, simple and divergent.

An aberrant member of the present tribe; the prosternum long in front of the coxæ, equally pubescent antennal funicle and unarmed tibiæ are not found in any other. In the long prosternum it is somewhat approached by *Anth. rufipes*.

The only species occurring in our fauna has been introduced from Europe.

**A. carpini** Herbert. Plate vii, fig. 38.—Oval, piceous, finely and densely punctured, and densely clothed above with short, grayish white pubescence, having a somewhat silvery lustre; the beak is densely punctured and opaque (♂), or less densely punctured, shining (♀); underside less densely pubescent. Antennæ and legs rufous. Long. 2.2—2.8 mm.: .09—.11 inch.

*Hab.*—Canada, New Jersey, Wisconsin, Kansas, N. Illinois.

#### **EUCLYPTUS** gen. nov.

Beak slender, about as long as head and prothorax, strongly curved, neither striate nor carinate; scrobes linear, commencing about the middle (♀) and reaching the middle of the eyes. Antennæ not very slender; scape moderately long, incrassate at the apex; funicle 7-jointed, pubescent first joint very long, second joint a little longer than the third, joints 3–7 transverse, closely articulate, outer joints wider; club obovate, pubescent, first joint large, occupying more than one-half of the whole mass, following joints short, somewhat retracted. Eyes rounded, moderately large, convex. Head globose, punctured; front flattened, not foveate. Prothorax a little flattened, wider than long, slightly narrowed in front, broadly rounded on the sides and base; scutellum small. Elytra elongate, wider at the base than the prothorax; sides feebly rounded and gradually narrowed to apex, which is separately rounded, leaving the pygidium exposed, striate and punctured; prosternum short in front of the coxæ, which are conical and more prominent than usual; mesosternum moderately wide between the coxæ, declivous in front and rounded behind; metasternum a little longer than the first ventral segment at middle. Ventral segments very unequal, first and second moderately long, third and fourth very short, and united scarcely as long as the second; fifth very long (♀), as long as the second and third together; pygidium exposed. Legs slender, femora feebly clavate, mutic; tibiæ slender, straight; articular surface oblique and not armed at the apex; tarsi slender, third joint not broadly bilobed; claws slender, with a broad, obtuse tooth underneath.

The type of this genus is a small testaceous insect without close relationship in any direction, except, perhaps, *Acalyptus*, with which it agrees in the somewhat flattened thorax, unarmed tibiae and the formation of the funicle. It agrees with *Alycodes* and *Elleschus* in the abdominal formation and appendiculate claws, but the fifth ventral segment is very long, and it is very different in other respects.

**E. testaceus** n. sp. Plate vii, figs. 39, 39a, 39b, 39c.—Elliptic, testaceous, almost glabrous. Beak shining, with a few remote punctures. Prothorax rather closely and finely punctured, with an ill-defined, smooth dorsal line extending from the anterior margin to about the middle. Elytral striae impressed, punctures moderate, close set; interspaces scarcely convex, slightly roughened; under surface remotely punctulate. Long. nearly 2 mm.; .07 inch.

*Hab.*—Buffalo, N. Y.

A unique ♀ in my collection. Easily recognized by its pale color, ventral formation, unarmed tibiae and appendiculate claws. In appearance it resembles *Notolomus basalis*, without, however, the dark basal spot of the elytra.

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1. *M. vittipennis* n. sp.

### MACRORHOPTUS Lec.

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2. *M. hispidus* n. sp.

### TACHYPTERUS n. g.

1. *T. quadrigibbus* Say, Curc. 15, ed. Lec. 1, p. 277; Sch., Curc. iii, p. 334.
2. *T. consors* n. sp.

### CIONISTES n. g.

1. *C. insolens* n. g.

### ANTHONOMUS Germ.

#### Subgenus *Coccotorus* Lec.

1. *A. scutellaris* Lec., Proc. Acad. Nat. Sci. Phila., 1858, p. 79; *Anth. ? prunicida* Walsh, Prairie Farmer, June 13, 1863; Proc. Bost. Soc. Nat. Hist. ix, 309.
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2. *A. leucostictus* n. sp.
3. *A. Hamiltoni* n. sp.
4. *A. pusillus* Lec., Proc. Amer. Phil. Soc. vol. xv, p. 202.

#### Subgenus *Trichobaropsis*.

1. *A. texanus* n. sp.

#### Subgenus *Leptarthrus*.

1. *A. julichi* n. sp.
2. *A. irroratus* n. sp.

#### Subgenus *Anthonomorphus*.

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2. *A. vulpinus* n. sp.
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3. *A. grandis* Boh., Sch. Gen. Cure. vii, 2, p. 232.
4. *A. gularis* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 197.
5. *A. virgo* n. sp.
6. *A. rufipennis* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 200.
7. *A. Bolteri* n. sp.
8. *A. rubellus* n. sp.
9. *A. confusus* n. sp.
10. *A. sycophanta* Walsh, Proc. Ent. Soc. Philos. vi, p. 265.  
*A. hæmatopus* Boh., Sch. Gen. Cure. vii, 2, p. 222.
11. *A. suturalis* Lec., Ann. Lye. Nat. Hist. N. York i, 171, pl. xi, fig. 9; Gyll., Sch. Gen. Curv. 111, p. 346; Boh., ibid. vii, 2, p. 223; *erythropterus* Say, Cure. 25, ed. Lec., 1, 283.
12. *A. brunnipennis* Mann., Bull. Mosc. 1843, ii, p. 292.
13. *A. melancholicus* n. sp.
14. *A. flavicornis* Boh., Sch. Cure. vii, 2, p. 231.
15. *A. morulus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 201.
16. *A. corvulus* Lec., ibid.
17. *A. subguttatus* n. sp.
18. *A. signatus* Say, Cure. 25; ed. Lec., i, 293; Gyll., Sch. Gen. Cure. iii, p. 348; Boh., ibid. vii, 2, p. 221; *A. bisignatus* Gyll., ibid. iii, p. 344.  
Var. *pallidus*.
19. *A. consimilis* n. sp.
20. *A. vespertinus* n. sp.
21. *A. musculus* Say, Cure. 15; ed. Lec. i, p. 277; Gyll., Sch. Gen. Cure. iii p. 35.
22. *A. concinnus* n. sp.
23. *A. sulcifrons* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 201.
24. *A. sexguttatus* n. sp.
25. *A. interstitialis* n. sp.
26. *A. ebeninus* n. sp.
27. *A. nigrinus* Boh., Sch. Gen. Cure. vii, 2, p. 230.
28. *A. albopilosus* n. sp.
29. *A. xanthocnemus* n. sp.
30. *A. æneolus* n. sp.
31. *A. faber* n. sp.
32. *A. effetus* n. sp.
33. *A. scutellatus* Gyll., Sch. Gen. Curv. iii, p. 342.
34. *A. dissimilis* n. sp.
35. *A. orchestoides* n. sp.
36. *A. juniperinus* Sanb. (*Eirirrhinus*), Proc. Bost. Soc. Nat. Hist. xii, p. 81.

37. *A. ater* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 198.  
 38. *A. squamosus* Lec., ibid. p. 202.  
 39. *A. tectus* Lec., ibid. p. 203. —  
 40. *A. squamulatus* n. sp.  
 41. *A. molochinus* n. sp.  
 42. *A. rufipes* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 204.  
 43. *A. disjunctus* Lec., ibid. p. 204.  
 44. *A. murinus* n. sp.  
 45. *A. hirtus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 203.  
 46. *A. ochreopilosus* n. sp.  
 47. *A. pauperculus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 203.

48. *A. latiusculus* n. sp.  
 49. *A. subfasciatus* Lec., Proc. Amer. Philos. Soc. vol. vx, p. 205.  
 50. *A. robustulus* Lec., ibid. p. 205.  
 51. *A. moleculus* Casey, Contributions No. 2, p. 191.

52. *A. unguularis* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 206.  
 53. *A. floralis* n. sp.  
 54. *A. nubilus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 205.

#### Subgenus *Cnemocyllus*.

1. *A. subvittatus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 203.  
 2. *A. ornatulus* n. sp.  
 3. *A. figuratus* n. sp.  
 4. *A. inermis* Boh., Eugenes Resa, Coleop. 131.  
 5. *A. jacobinus* n. sp.  
 6. *A. decipiens* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 206.  
 7. *A. canus* Lec., ibid. p. 207.  
 8. *A. affinis* Lec., ibid. p. 207.  
 9. *A. nanus* Lec., ibid. p. 207.  
 10. *A. elongatus* Lec., ibid. p. 204.  
 11. *A. ligatus* n. sp.  
 12. *A. lineatulus* n. sp.

#### Subgenus *Anthonomochæta*.

1. *A. heterogenus* n. sp.

#### *ANTHONOMOPSIS* n. g.

1. *A. mixtus* Lec., Proc. Amer. Philos. Soc. vol. xv, p. 206.

#### *PSEUDANTHONOMUS* n. g.

1. *P. cratægi* Walsh, Proc. Ent. Soc. Phila. vi, p. 266.  
 2. *P. validus* n. sp.  
 3. *P. incipiens* n. sp.  
 4. *P. seriesetosus* n. sp.  
 5. *P. tomentosulus* n. sp.  
 6. *P. facetus* n. sp.  
 7. *P. longulus* n. sp.  
 8. *P. rufulus* n. sp.  
 9. *P. brunneus* n. sp.  
 10. *P. parvulus* n. sp.  
 11. *P. relictus* n. sp.

## NEOMASTIX n. g.

1. *N. solidaginis* n. sp.
2. *N. punctulatus* n. sp.

## CHELONYCHUS n. g.

1. *C. longipes* n. sp.

## NANOPS n. g.

1. *N. Schwarzii* n. sp.

## EPIMECHUS n. g.

1. *E. mimicus* n. sp.
2. *E. curvipes* n. sp.
3. *E. soriculus* n. sp.
4. *E. adpersus* n. sp.
5. *E. nevadicus* n. sp.

## EPHELOPS n. g.

1. *E. triguttatus* n. sp.

## ALYCODES n. g.

1. *A. dubius* n. sp.

## ELLESCHUS Steph.

1. *E. bipunctatus* Linné, Syst. Nat. ed. x, p. 380; Boh., Sch. Gen. Cure. vii, 2, p. 187.
2. *E. Scanicus* Payk., Fanna Suec. iii, p. 251; Boh., Sch. Gen. Cure. vii, 2, p. 186.
3. *E. ephippiatus* Say, (Eriirrhinus). Cure. 25; ed. Lec. i, p. 293; Gyll., Sch. Gen. Cure. iii, 289; Walsh, Proc. Ent. Soc. Phila. vi, p. 268.  
Var. *E. californicus* Casey, Contributions No. 2, p. 193.
4. *E. angustatus* n. sp.

## ORCHESTES Ill.

1. *O. ephippiatus* Say, Cure. 16; ed. Lec. i, 280.
2. *O. salicis* Linné, Syst. Nat. ed. x, p. 381; Oliv., Ent. v, 83, p. 104, t. 31, fig. 490; Bris. Mon. p. 292.  
*O. subhirtus* Horn, Proc. Amer. Philos. Soc. November, 1873, p. 462.
3. *O. niger* Horn, ibid. p. 462.
4. *O. parvicollis* Lee., Proc. Amer. Philos. Soc. vol. xv, p. 208.
5. *O. armatus* n. sp.
6. *O. puberulus* Boh., Eugenes Resa Ins. p. 133.
7. *O. canus* Horn, Proc. Amer. Philos. Soc. 1878, p. 620.
8. *O. pallidicornis* Say, Cure. 16; ed. Lec. vol. i, p. 280.
9. *O. betuleti* Horn, Trans. Amer. Ent. Soc. 1885, p. 161.
10. *O. rufipes* Lec., Proc. Amer. Philos. Soc. vol. xv, 208.  
Var. *O. minutus* Horn, Proc. Amer. Philos. Soc. 1878, p. 620.

## XANTHUS n. g.

1. *X. pygmæus* n. sp.
2. *X. liliputanus* n. sp.

## ACALYPTUS Schwenk.

1. *A. carpini* Hbtt., Kaef. vi, p. 204, t. 74, fig. 3, *a-b*; Gyll., Ins. Suec. iii, p. 120.

## EUCLYPTUS n. g.

1. *E. testaceus* n. sp.

## Unrecognized Species.

1. *A. helvolus* Boh., Sch. Gen. et Spec. Cure. vol. vii, 2, p. 224.

## EXPLANATION OF PLATE V.

- Fig. 1.—*Magdalinops vittipennis*; 1a, under surface of same; 1b, antennæ of same.  
 " 2.—Lateral view of head and rostrum of *Macrohoptus estriatus*.  
 " 3.—Antennæ of *Tachypterus quadrigibbus*; 3a, posterior tibia of same.  
 " 4.—*Cionistes insolens*; 4a, lateral view of head of same.  
 " 5.—Abdomen of *Coccotorus scutellaris* ♂.  
 " 6.—*Anthonomocyllus elegans*; 6a, underside of same; 6b, lateral view of same.  
 " 7.—*Anthonomocyllus leucostictus*; 7a, anterior view of head and beak of same.  
 " 8.—Front view of head and beak of *Anthonomorphus fulvus*; 8a, same viewed laterally.  
 " 9.—Lateral view of head, beak and antenna of *Trichobaropsis texanus*.  
 " 10.—*Leptarthrus Julichi*; 10a, antennæ of same; 10b, anterior leg of same

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## EXPLANATION OF PLATE VI.

- Fig. 11.—Antenna of *Leptarthrus irroratus*; 11a, anterior tibia of same.  
 " 12.—Anterior thigh and tibia of *Anth. pomorum*.  
 " 13.—Anterior tibia of *Anth. virgo* ♂.  
 " 14.—Abdomen of *Anth. flavicornis* ♂.  
 " 15.—Abdomen of *Anth. signatus* ♂.  
 " 16.—Abdomen of *Anth. scutellatus* ♂.  
 " 17.—Anterior tibia, showing terminal hook of *Anth. ochreopilosus*.  
 " 18.—*Anthonomus pauperculus*.  
 " 19.—Posterior tibia of *Cnemocyllus subvittatus* ♂; 19a, same of ♀.  
 " 20.—*Cnemocyllus ornatulus*; 20a, posterior tibia of ♂ of same; 20b, posterior tibia and tarsus of same ♀.  
 " 21.—*Cnemocyllus figuratus*; 21a, posterior tibia and tarsus of same ♂.  
 " 22.—Posterior tibia of *Cnemocyllus inermis* ♂; 22a, abdomen of same.  
 " 23.—*Cnemocyllus elongatus*; 23a, hind tibia of ♂ of same.  
 " 24.—*Cnemocyllus ligatus*; 24a, hind tibia of ♂ of same; 24b, hind tibia of ♀ of same.  
 " 25.—*Cnemocyllus lineatulus*

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## EXPLANATION OF PLATE VII.

- Fig. 26.—Abdomen of *Anthonomopsis mixtus*.  
 " 27.—Lateral view of head, beak and antenna of *Pseudanthonomus incipiens*.  
 " 28.—Antennæ of *Pseudanthonomus relictus*.  
 " 29.—Antenna of *Neomastix solidaginis*.  
 " 30.—Anterior leg of *Chelonychus longipes*; 30a, lateral view of tarsus of same; 30b, claws of same.  
 " 31.—Head, beak and antenna of *Nanops Schwarzii*.  
 " 32.—Posterior tibia of *Epimechus curvipes*.  
 " 33.—Head and antenna of *Ephelops triguttatus*.  
 " 34.—*Alycodes dubius*; 34a, abdomen of same.  
 " 35.—*Elleschus scanicus*; 35a, claw of same; 35b, same of *E. bipunctatus*; 35c, same of *E. ephippiatus*; 35d, same of *E. angustatus*; 35e, abdomen of *E. ephippiatus*.  
 " 36.—*Orchestes armatus*.  
 " 37.—Antenna of *Xanthus pygmaeus*; 37a, tibia of same.  
 " 38.—Antenna of *Acalyptus carpinii*.  
 " 39.—Antenna of *Encllyptus testaceus*; 39a, abdomen of same; 39b, anterior tibiae of same; 39c, tarsal claw of same.